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ORIGINAL ARTICLES.

THE DIAGNOSIS OF CHANGES IN THE SIZE, POSITION, AND MOTILITY OF THE STOMACH IN CASES WHERE INTRAGASTRIC INSTRUMENTS CANNOT BE USED.

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IT was only twenty years ago, in 1875, that Ewald[1] by accident discovered that a soft, flexible tube could be introduced into the stomach without a stylet. Since then the use of this instrument has been very widely extended. When in 1885 the writer took his first lessons in lavage under Oser, in Vienna, it seemed almost a novelty there, and was very rarely employed in the United States; but it has been more and more popularized, until now in some quarters it has possibly come to be abused, especially by patients who have learned to wash out their own stomachs.

There are many cases of gastric disease in which, for one reason or another, we cannot employ even the soft tube, and still less the sound, or any of its ingenious modifications and amplifications, such as Einhorn's gastrodiaphane or Turck's gyromele. The contraindications are given by the leading authorities, and include especially all cases of acute illness, recent hemorrhages from any part, gastric ulcer as a rule, most serious diseases in their last stages, congestion of the brain, and advanced age. It needs to be remembered, however, that age for this purpose should be reckoned by the condition of the heart and bloodvessels, rather than by years. I have had patients eighty years of age who took the tube with less inconvenience than many do at forty.

Then, besides the contraindications, we are obliged to take into account the foolish dread which many nervous patients have of this trifling procedure, amounting sometimes to an insuperable obstacle. In my long experience with chronic invalids in Atlantic City, the most frequented health-resort in America, I have found that only a small proportion of patients of the better class who need special treatment will consent to the use of a stomach-tube, at least until their diseases have progressed to a serious stage.

Therefore, in order to reach as accurate a diagnosis as possible in such cases, I have been obliged to make the most of the various methods which do not include the employment of any instrument inside the stomach. Trusting that the mode of systematizing such methods which has proved useful in my own work may be helpful to others, I venture to submit a description of it.

In thus pointing out what can be done when necessary without the tube, there is no thought of underestimating the enormous advantages which that little instrument affords in the diagnosis and treatment of gastric disease. In studying the chemical functions of the stomach the tube is virtually indispensable, though occasionally accidental vomiting at the right time gives an opportunity for making the necessary chemical tests; and the Einhorn bucket may sometimes serve us a good turn.

It would require too much space to go into a discussion of symptomatology and the now somewhat promising results of the chemical and microscopical examination of the urine and blood. That these latter researches are capable of throwing much light upon the affections of the stomach as well as of those of the intestines there is no longer any question.

We come then at once to the examination of the abdomen externally. Not stopping here to consider what can be learned from inspection and palpation, as to the usefulness and great value of which no question has ever been raised, we pass on to a study of clapotement and percussion. It is to the value of the combined employment of these two procedures, according to a certain order, that I desire to call attention especially. Both are separately well described in the works of Ewald,[2] Boas,[3] and other standard treatises on diseases of the stomach, and during recent years there have been numerous contributions to current medical literature on abdominal percussion. The most notable of these is a paper by Dehio,[4] in which he gives directions for percussing with the patient lying on the back, as well as standing, after drinking various portions of water. He states that the normal empty stomach is entirely within the thorax, and not accessible to percussion, but that the drinking of one-quarter of a litre of water produces in the erect position a dull area, which extends 11½ cm. below the lower end of the corpus sterni; then by drinking the same quantity a second time, the dulness is extended 2.7 cm. further downward, and so on until after the person has taken a whole litre he finds in the ma-

jority of cases the lower border of stomach-dulness a few centimetres above the level of the umbilicus. He points out also that from the different degrees of distensibility thus indicated we may infer much as to the motility of the stomach.

On the other hand, Jaschtschenko,[5] at about the same time, took quite the opposite view of the matter. He sharply criticises Traube, whose conclusions were similar to those of Dehio above cited, and declares that the empty stomach is percussible, and that filling it gradually with water causes an extension of the dulness upward but not downward. Neither of these two writers makes any mention of clapotement.

Obrastrow,[6] of Kiel, writing on this subject in 1888 an elaborate and valuable paper which I had not seen till the present article had been nearly finished, gave a full exposition of clapotement, but had not at that time as much faith in the accuracy of the information to be obtained by a delicate percussion as he has evidently since acquired, judging by an able contribution which has just appeared from his pen.[7]

Rose,[8] an American physician, has also recently written on the subject of the splash.

Certain it is that even the normally small healthy stomach under usual conditions, when empty as well as full, presents a portion of its anterior surface in contact with the front wall of the thorax, and to a small extent with the front wall of the abdomen; and except in conditions of marked obesity it is not generally very difficult to determine both the upper and lower borders of that portion in contact. But stomachs which are thus almost entirely covered by the ribs are rare, at least in civilized communities, and physicians are seldom called upon to prescribe for them.

Physicians are most interested in abnormal stomachs, which nearly always extend far enough below the ribs to afford us the opportunity of testing their condition by all the usual methods of physical exploration.

My own experience has convinced me that stomachs, like noses, may vary considerably in size, and yet be within normal limits, but that when they extend, in the empty condition, much lower than a point midway between the sternum and umbilicus, they are generally pathological. That experience includes the examination of about 300 persons by the methods now under consideration. Two hundred and twenty-five of these were examined in the course of my practice in Atlantic City and the remainder in the Polyclinic of the Augusta Hospital in Berlin during the present winter, through the courtesy of Professor Ewald and his chief assistant, Dr. L. Kuttner. By the kindness also of Dr. Oesterreicher, pathologist at the same hospital, I have been permitted to witness numerous autopsies in the cases of persons who had had various forms of gastric disease as well as a few whose stomachs were normal as to their size and position.

At some future time I may summarize the results of these observations and of others yet to be made in a more general way, and deduce from them some of the lessons which they teach; but it is sufficient for the object of this article to show that they confirm the value of clapotement and percussion.

In a number of the cases in Ewald's clinic in which, by external examination, I had diagnosticated and designated by chalk-lines on the abdomen, gross departures from the normal in the way of displacement, dilatation, or both, the stomach was afterward inflated by air, and in some instances illuminated by the electric lamp from within, with a substantial verification of the results previously obtained. In two noteworthy instances while by percussion the boundaries were correctly determined, the splash obtained by clapotement told an entirely different story, and thus led at first to some doubt. But as exceptions are said to "prove the rule," so these two exceptional cases have been unusually instructive. Both were cases of downward displacement and dilatation. In one of them the entire stomach had fallen until the fundus rested firmly upon the pelvic organs; in the other the pyloric end, greatly dilated, occupied the same position, while the cardiac portion was still in its normal place. Percussion in various positions with the stomach first empty and afterward partly filled, gave the above results, and distending the organ with air was fully confirmatory; but the splash, even after one or two glasses of water had been drunk, could not be heard at any point below the navel in either case. Usually with the patient lying on the back the splash is heard at the nethermost part of the stomach when obtainable at all.

The practical inference to be drawn from this observation is, that if in any case clapotement and percussion do not agree in their testimony, we should be guided by the latter rather than the former, as being less likely to deceive, though until this recent experience I was inclined to the contrary view. When clapotement and the results of intelligent, careful percussion agree, we need have no doubt. When, as rarely happens, they disagree and the case is important, it will be well to inflate either the stomach or colon to settle the point. Experiments were made by me in a series of six cases of gastrectasia in Ewald's clinic with a view to ascertain whether by clapotement and percussion together it is possible to determine positively when the stomach has emptied itself. The patients reported in the morning fasting. In each of these cases when the splash was obtainable and percussion in the erect position demonstrated dulness in the

lower segment of the stomach, I was able afterward by means of the tube to bring up a considerable quantity of the undigested remnants of a previous meal. Then after carefully emptying the stomach by aspiration the former tests were again employed, and this time with negative results.

In a number of other (doubtful) cases that were required to present themselves in the morning fasting the presence of fluid in the stomach was suspected, and to determine the question I practised clapotement and percussion, but failed to obtain a splash, or to detect dulness over the lower part of the gastric area in the erect position. The tube was then used, but nothing obtained, except three or four grammes of a pale, thin solution, consisting mostly of saliva.

In this simple manner, therefore, we may test the motility of any given stomach frequently, at various intervals after various kinds of meals, with very little difficulty or inconvenience to the patient, especially after the boundaries have once been accurately determined.

Numerous experiments have also been made by me to determine whether the stomach fills upward or sinks lower after the taking of food or drink in successive portions. The results have been somewhat various, as might be expected, according to the muscular energy of the stomach tested. In the cases of gastrectasia and all cases of weak motility, there has been a depression of the lower border after each glass of water, except when it was already at the lowest point attainable, and then there was a demonstrable widening of the organ on either side. Since beginning this particular investigation I have unfortunately not been able to find many normal stomachs, but the few presumably healthy ones examined filled upward without the lower border as a rule showing any noticeable depression after drinking several successive glasses of water, thus confirming the observation of Jaschtschenko rather than those of Dehio and Taube. In some cases, however, in which there were no other signs of weakness, the area of dulness increased both upward and downward after drinking.

It is best to examine the patient at a time when the stomach should be entirely empty—that is, in the morning fasting or six hours at least after the last meal. But this is not always practicable, and after a light breakfast or a very moderate lunch a healthy stomach will usually be found by the tests of clapotement and percussion to have voided its contents into the intestine at the end of two hours. Even when these tests show that gastric digestion is still incomplete, we may in many cases nevertheless satisfy ourselves with sufficient accuracy as to the size, position, and motility of the organ; but in cases of difficulty or obscurity it is safest to examine a second time under the best possible conditions.

If upon examining a patient six hours at least after his last meal we obtain the splash by clapotement, we can infer deficient motility. Noting at the same time the lowest point where the splash can be distinctly heard, we may infer as a rule that the lower boundary extends to about that level.

We should then percuss the abdomen with the patient in various positions to verify the results of clapotement and map out the boundaries.

If no splash should be obtained, before proceeding to administer water it is well to percuss with the patient first recumbent, and afterward in the erect posture, to determine the apparent stomach-boundaries while the viscus is still empty. Note these mentally or mark them on the body.

Then have the patient drink ⅛ to ¼ litre of water, and try again to obtain the splash. If it is obtained distinctly after the smaller amount of water mentioned, it raises a question as to the motility, and will also show where to percuss with especial care and delicacy for the lower border.

For the adept in percussion the fingers may suffice to bring out the finer differences in tone, but with a good percussor and pleximeter the task is greatly simplified.

The cut of a new pleximeter devised by myself will be found below. It is wholly made of rubber of medium hardness and is very easily carried in the pocket. The smaller end serves ordinarily as the handle, but in mapping out spaces very accurately or in percussing in narrow spaces, as between the ribs or over the clavicle, especially in children, it is better to reverse the ends and percuss over the smaller part.

Any one of the rubber-tipped percussors usually found in the instrument-stores can be used satisfactorily with this pleximeter.*

Having already made out the apparent boundaries with the stomach empty, we percuss again with it partly filled while the patient stands, or, in the case of persons who are in bed or very weak, sitting upright will usually suffice to bring the fluid contents in contact with the front wall of the abdomen and thus develop a zone of dulness. In going over a new case in this way it is best to give one glass of water at a time, when, if the stomach is atonic, the

* The above cut was published in THE MEDICAL NEWS of July 13, 1895, with a few lines descriptive of it, but is reproduced here because of its importance in connection with the subject-matter of this paper.—B. R.

area of dulness usually extends downward with each successive glass; but if entirely strong, it extends upward only or mainly.

One can begin either above or below, and should then percuss carefully in the median, left parasternal, and mammillary lines from the level of the nipple to the pubes in any doubtful case. Having determined the highest and lowest points of the anterior thoracic and abdominal surface with which the stomach is in contact, we should percuss perpendicularly across the oblique curved line joining these points and forming the left lateral boundary of this epigastric area. Then the right lateral boundary separating the stomach from the ascending colon should be made out in like manner. With the patient erect and the stomach well filled, this is usually a simple matter, the ascending and descending colons and their flexures nearly always emitting a more or less tympanitic note, even when partly filled. If the precaution has been taken to have the colon previously emptied, the contrast with the dull note over the full stomach will be, of course, still more marked. Having the patient lie first on one side and then on the other during the percussion may help to clear up a doubtful question. Filling the colon with air by the double-bulb rubber syringe in the usual manner will emphasize strongly the contrast with the dull stomach-area in the erect position, and filling the colon with tepid water while the patient is recumbent reverses the contrast in a very striking manner, though this is not a feasible undertaking with all patients, since some cannot retain the liquid long enough.

The determination of the upper border or stomach-lung boundary is the most difficult part of the procedure. Usually, however, by trying alternately light and strong percussion, there will be obtained a marked difference in the two qualities of the resonant tone, that over the stomach being more tympanitic. Still it requires much practice to make this out quickly and positively. Occasionally in exceptional cases where the stomach contains very little gas, we may fail at one examination and succeed readily at a second one. This line is sometimes more easily determined after a meal, since then such gases as are present are forced to the upper part and produce more tympany. One needs to bear in mind such possible disturbing factors as a greatly enlarged spleen or enlarged left lobe of the liver; also left-sided pleurisy filling up the half-moon-shaped space of Traube with exudation.

However, there is only one condition at all frequent which is likely to prevent us entirely from determining the boundaries of the stomach by the combination of procedures we have been describing, and that is extreme obesity with great thickening of the anterior abdominal wall. Fortunately, however, this is a condition which does not often coexist with any serious form of gastric disease.

To recapitulate, the following nine different kinds of stomachs can usually be differentiated by this combination of methods:

1. Stomach of normal size, in normal position, and having sufficient motor power.

2. Stomach normal as to size and position, but weak in motility. Gastric atony.

3. Stomach enlarged, but motor power strong. Megalogastrie of Ewald.[9]

4. Stomach enlarged and motility weak. Dilatation or gastrectasia.

5. Stomach wholly displaced downward, but otherwise normal. Not enlarged. Gastroptosis of Glenard.

6. Stomach both enlarged and displaced downward as a whole, but not dilated. Motility good. Megalogastrie with gastroptosis.

7. Stomach wholly displaced downward and dilated. Weak motility. Gastroptosis with gastrectasia.

8. Pyloric end of the stomach displaced downward and swung around to the left, but without dilatation. Often the pylorus is carried down almost, if not quite, into the long axis of the fundus, producing what has been called by Meinert[10], Kellogg,[11] and others the vertical or subvertical stomach, according to the degree of the displacement. This form may be appropriately called pyloroptosis.

9. Pyloric end of the stomach displaced as in No. 8, and also dilated. Pyloroptosis with dilatation.

These several varieties of stomachs may be recognized as follows:

1. Normal stomach. If empty, no splash will be obtainable until after the viscus has been partly filled, and then either none or a feeble one heard, not lower, as a rule, than midway between the lower end of the sternum and the umbilicus—exceptionally to within three cm. of the umbilicus. Percussion, especially with the patient standing after drinking water, will demonstrate the boundaries in normal place.

2. Atonic stomach. The findings will be the same, except that a splash may possibly be heard four to six hours or longer after a full meal, or, if not, the drinking of a very small quantity of water will develop it decidedly. Percussion will show delayed emptying of the organ.

3. Megalogastrie. Upper border will be found in the normal situation. Lower border may be at the level of the umbilicus or even below, but motility good. No splash obtainable six hours or longer after a full meal.

4 Gastrectasia. Splash usually obtainable six hours or longer after a meal and in bad cases at

any time during the twenty-four hours. Percussion shows enlargement of the organ and delay in emptying itself.

5. Gastroptosis. Splash usually rather more easily obtainable than in the normal condition and at a lower level, often at the navel or even considerably below it. Percussion shows descent of both upper and lower boundaries, but no enlargement.

6. Megalogastrie with gastroptosis. Same as in No. 5, except that percussion shows the upper boundary not so much displaced, or if so, then the lower border still further below its normal line. Percussion shows enlargement.

7. Gastroptosis with gastrectasia. Same as No. 6, except that the splash is obtainable too long after taking food or drink. Clapotement and percussion show abnormal delay also in emptying the stomach.

8. Pyloroptosis. Splash obtained usually far below the level of the normal lower border. Percussion reveals the peculiar outlines of the vertical stomach with the pyloric end low in the abdominal cavity.

9. Pyloroptosis with dilatation. Same as in No. 8, except that the splash is usually more pronounced and may be found too long after food or drink. Percussion shows also a widening of the pyloric end of the stomach.

In any of the foregoing cases it may be necessary to inflate the stomach with carbonic acid gas, supposing it to be impracticable to use the tube, or to inflate the colon with air from below.

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CONSANGUINEOUS MARRIAGE AS A FACTOR IN THE CAUSE OF DISEASE.[1]

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ACCORDING to the old Levitical law, a man was not allowed to marry a near relative. It was an abomination to the Lord, and if afflictions appeared among the offspring of such marriages, such as blindness, deaf-mutism, idiocy, or physical deformity of any kind, naturally it was looked upon as a direct result of the breaking of this law and a visitation of Divine wrath. However much hereditary and other influences had to do with these abnormalities, consanguinity was ascribed as the cause.

As a result, we doubtless have statistics which attribute disease to this cause much more frequently than the facts warrant; *e. g.*, in a table by Dr. Manning, in three cases in which brother and sister married, there were seventeen children, of whom nine were idiotic, or about 53 per cent. Some would attribute this to consanguinity, but we find that the parents were simple-minded, so heredity partly accounts for the idiocy independent of the consanguinity. The same author mentions twelve families in which the parents were not related, but one or both of whom were either insane themselves or had near relatives insane. In these families there were forty-four children, twenty-six of whom, or 59 per cent., were idiotic.

So in many cases there may be other factors than consanguinity. Many people are inclined to accept, without question or investigation, consanguinity as the cause of nearly all the afflictions which befall the offspring of such marriages.

Scientific men, however, without intending in the *least* to be sacrilegious, are apt to investigate more thoroughly these cases and see if they cannot be explained by natural laws, and there are a number who think, with Mr. Alfred Huth, "that consanguineous marriages, by the mere fact of consanguinity and irrespective of any inheritance, are not injurious to offspring."

In the consideration of this subject, heredity, which plays a most important part, must be considered. We know beyond the question of a doubt that some families have an hereditary tendency or predisposition to certain diseases, such as gout, cancer, tuberculosis, insanity, deaf-mutism, etc.[2] And a "great variety of traits, physical and mental, are of every-day observance as existing in unusual degree in certain families, such as superior or inferior stature, corpulence or leanness, extraordinary

[1] Read before the Medical Society of the District of Columbia, November 6, 1895.

[2] S. S. Herrick, M.D., in the Reference Handbook.

muscular strength, loquacity, precocity in mental or bodily development or tardiness in the same, left-handedness, grace of movement or oddities of gesture. While some families are characterized for such virtues as business integrity, truthfulness, temperance, and frugality, others are equally marked for dishonesty, mendacity, drunkenness, and prodigality."

Now, if two persons marry who have inherited similar characteristics, these characteristics are undoubtedly not only handed down, but are apt to be augmented in the offspring, as we find abundantly illustrated among animals in which distinct breeds are created by the careful selection and mating of animals which have the peculiar traits desired.

This being admitted, we would then naturally expect to find among children of consanguineous marriages the family peculiarities greatly intensified or augmented, whether they be of mind or body, of health or disease. So as a factor in the cause of disease where there is a family predisposition to tuberculosis, cancer, insanity, idiocy, deaf-mutism, blindness, or any other deformity, consanguineous marriage would undoubtedly augment that predisposition, and as near relatives are apt to possess a number of similar defects, such marriage would result in the greater tendency to disease. As a result of atavism or reversion, some trouble may develop which has been latent during many generations.

Then heredity alone should be sufficient reason to prevent two persons with similar hereditary weaknesses from marrying.

In the discussion of this subject two questions arise: First. When there is an hereditary predisposition to a certain disease on both sides, is disease any more apt to occur in the offspring of parents who are related than in those who are not? Second. When there is no hereditary disease of any kind on either side, is the disease liable to occur simply as a result of consanguinity? In other words, is consanguinity of itself a cause of disease? Quite a number of scientific men of to-day deny that it is, holding that the apparent cases are really results of heredity, syphilis, or inebriety.

However, there are many cases of disease among the offspring of consanguineous marriages in which there is no history of syphilis, inebriety, or hereditary tendencies whatever, and where there is nothing to which we can ascribe the disease except consanguinity.

For example, in my own practice I have recently seen two families suffering with retinitis pigmentosa, in which the parents were healthy, but were first-cousins.

There was no history of eye-trouble in either family or of syphilis or inebriety.

In the first family the parents and grandparents were first-cousins. There were three sons and one daughter nearly blind with the disease and three sons and one daughter with good vision.

In the second family the parents were first-cousins with no hereditary diseases whatever. There were four daughters and one son suffering from retinitis pigmentosa, and three sons and one daughter with good eyes; one child died in infancy. Supposing that this infant had good eyes, the result would be exactly 50 per cent. in each family suffering with the disease.

When retinitis pigmentosa occurs it is so frequently found among the offspring of consanguineous marriages that nearly every author of a work on ophthalmology speaks of it as the most common cause. In ninety-five cases of retinitis pigmentosa reported by Liebreich in which the parentage was traced forty-three were of consanguineous origin, or 45 per cent. In twenty-one cases seen by Dr. Frinzel eight were of consanguineous parentage, or 38 per cent.

The following are quotations from well-known authors as to the cause of retinitis pigmentosa:

"In almost a third of the cases the disease occurs in individuals descended from consanguineous parents. Herein apparently lies the explanation of the fact that pigmentary degeneration of the retina is so frequently associated with other congenital anomalies, since these latter also occur as a result of the consanguinity of the parents."—*Fuchs.*

"The disease is markedly hereditary. In numbers of instances consanguinity of the parents of the patient has been found; indeed, the disease has been attributed to this alone. Hereditary syphilis has been given as a possible cause of retinitis pigmentosa, but this has not been proven. The affection is found among deaf-mutes, idiots, epileptics, and in this sense is connected with morbid states of the nervous system. Very often no cause can be assigned. The disease is either congenital or begins in childhood."—*De Schweinitz.*

"It is said to be one of the results of intermarriage of near relatives. This, however, is probably true only in the sense that in any case of in-and-in breeding the tendency to reproduce family peculiarities is much strengthened."—*Norris and Oliver.*

"Retinitis pigmentosa appears to have some obscure connection with morbid states of the nervous system. It occurs as Liebreich first pointed out—very frequently in the offspring of marriages of consanguinity. It has been thought to be connected with inherited syphilis, but the evidence on the subject scarcely supports the theory."—*Gowers.*

"It is undoubtedly strongly heritable, and many high authorities believe that it is really produced by consanguinity of marriage, either between the parents or near ancestors of the affected persons."—*Nettleship.*

"Retinitis pigmentosa often affects more than one member of a family, the patients being frequently defective in intelligence or deaf and dumb. Many of them are the offspring of marriages of consanguinity, and in others an inherited syphilitic taint is present, while in others no cause can be assigned."—*Swanzy.*

"The etiology of this disease is not known; it often appears in several members of the same family, as if it were hereditary, and sometimes is coincident with

idiocy or deaf-mutism. A certain number of children affected with this disease are the offspring of consanguineous marriages; others seem to be the subjects of hereditary syphilis."—*Meyer.*

"Retinitis pigmentosa is said to be most commonly met with among the offspring of persons nearly related to one another; but this can hardly be the cause of the disease among the natives of India, as they are scrupulous in observing the restrictions they place upon the intermarriage of relatives; yet we have seen a considerable number of instances of this disease among native patients. It is common to find this affection in several members of the same family."—*Macnamara.*

"It is found in families, and intermarriage of kindred has been considered greatly instrumental in its production. Leber finds about 25 per cent. of the cases within this category. Dr. Chazarain, of Bordeaux, says, in a very able paper, 'On the Marriage of Consanguinity and Deaf and Dumbness,' which is generally supposed to be one of the most constant defects resulting from such a marriage: 'M. Boudin informs us that deaf-mutes are the issue of consanguineous marriages in the proportion of 28 per cent. at the Paris Imperial Institution, 25 per cent. at Lyons, and 30 per cent. at Bordeaux, and that as regards the Jews of Berlin twenty-seven in ten thousand are deaf-mutes, while the proportion is only six in ten thousand among the Christian population in that city;' and apparently, therefore, with great justice, he concludes that the hypothesis of the pretended harmlessness of consanguineous marriages is contradicted by the most evident and well-authenticated facts."—*Noyes.*

Statistics on Deaf-mutism, by Holger Mygind, M.D., Copenhagen, 1894, allow the deduction that in 13,469 total marriages 697 deaf-mutes were born of consanguineous marriages—5.17 per cent.; and, furthermore, that of congenital deaf-mutes in a total of 6903 marriages 759 were born of consanguineous marriages—10.9 per cent. If consanguinity has any effect in the production of deaf-mutism, we would expect to find it more especially among congenital cases; so we do find, according to the above statistics, the percentage in such cases doubled.

Mygge has subjected all the statistics that had appeared up to 1879 to a most critical examination, and came to the conclusion that the issue of consanguineous marriages were absolutely more exposed to idiocy, insanity, and other physiological defects than other persons. He found while in Denmark consanguineous marriages may be supposed to represent three-fourths per cent. of all marriages, 6.75 per cent. of the deaf-mutes admitted into the Royal Deaf and Dumb Institution at Copenhagen, between 1858 and 1877 (altogether 477), were the result of such marriages. If the congenital deaf-mutes were considered alone, then 7.55 per cent. were from consanguineous marriages.

Among 553 Danish deaf-mutes only 3.3 per cent. of those with acquired deaf-mutism were born of consanguineous marriages, while this was the case with 14.6 per cent. of the congenital cases.

The Irish statistics proved that the closer the degree of relationship between the parents the larger was the number of deaf-mute children born. This is confirmed in the Danish deaf-mutes. One marriage between aunt and nephew produced three deaf-mutes. Four marriages between uncle and niece produced eleven deaf-mutes. Twenty-six marriages between first-cousins produced thirty-eight deaf-mutes. Sixteen marriages between second-cousins produced twenty deaf-mutes. Forty-seven marriages between blood-relatives produced seventy-two deaf-mutes.

Wilhelmi could find hereditary influences in only two of eighteen consanguineous marriages with deaf-mute children, and Mygge in only two out of fifteen.

Dr. Bemiss gives an account of 833 marriages between relations in which he finds the following results: In ten cases of incest with parents, or between brother and sister, 93 per cent. of the offspring were defective. In twelve marriages with niece or aunt 75 per cent. were defective. In fifty-six marriages between blood-relations, the issue of blood-relations, 53 per cent. were defective. In twenty-seven marriages between double first-cousins 27 per cent. were defective. In one hundred and twelve marriages between second-cousins 13 per cent. were defective; while in 125 marriages between persons in no way related only 2 per cent. were defective.

From close in-and-in-breeding of animals we find physical and mental degeneration and often deformity. I know of a lady who raised six generations of canary-birds without crossing. In the last brood of four birds one was healthy, while three had their legs growing from their backs and their wings were where their feet should have been.

In a paper by E. F. Brush, he quotes Darwin as saying: "With respect to pigs, there is more unanimity among breeders on the evil effects of close inter-breeding than, perhaps, in regard to any other large animal." Mr. Druce, a great and successful breeder of the improved Oxfordshire (a crossed race) writes: Without change of males of a different tribe, but of the same breed, constitution cannot be preserved. Lord Western was the first importer of a Neapolitan boar and sow; from this pair he bred in-and-in until the breed was in danger of becoming extinct, a sure result, as Mr. Sidney remarks, of in-and-in breeding. Darwin further relates that a Mr. Wright, a well-known breeder, bred a family of pigs in-and-in for seven generations; the number of pigs was reduced at each gestation, and of the offspring thus produced many were idiotic, without sense even to suck, and when attempting to move could not walk straight, until finally one sow was the sole offspring; she would not become pregnant by her sire, while to a stranger in blood she bred at the first trial.

These investigations certainly indicate that consanguinity of itself is a cause of disease, and that

hereditary diseases are much augmented by such marriages.

In an address to the deaf, by Alexander Graham Bell, he says:

"The laws of heredity seem to indicate that a consanguineous marriage increases or intensifies in the offspring whatever peculiarities exist in the family. If the family is characterized by the large proportion of persons who enjoy health and live to old age with unimpaired faculties, then a consanguineous marriage in such a family would probably be beneficial, by increasing and intensifying these desirable characteristics in the offspring. On the other hand, if the large proportion of the family betray weakness of constitution—for example, if many of the children die in infancy and a large proportion of the others suffer from ill health, only a few living to old age with impaired faculties—then a consanguineous marriage in such a family would probably be hurtful to the offspring. A large proportion of the children would probably die in infancy, and the survivors be subject to some form of constitutional weakness."

As there are few families entirely free from constitutional defects of some kind, a prudent person would do well to avoid a consanguineous marriage in any case, not necessarily on account of deafness, but on account of the danger of weakening the constitution of the offspring. Remoteness of blood is eminently favorable to the production of vigorous offspring, and those deaf persons who have many relatives deaf would greatly diminish their liability to have deaf offspring by marrying persons very remote in blood from themselves.

Children, I think, tend to revert to the type of the common ancestors of their parents. If the nearest *common* ancestors are very far back in the line of ancestry, the children tend to revert to the common type of the race. Deafness and other defects would be most likely to disappear from the family by marriage with a person of different nationality.

THE DIAGNOSIS AND TREATMENT OF GOUT.

BY LOUIS F. BISHOP, M.D.,
OF NEW YORK.

IN a previous paper we dwelt very extensively upon the theory and distribution of gout. Interesting though it may be to theorize as to its cause, the practical outcome of such study should be the recognition of the disease in its various forms and the application of a proper plan of management. The subject naturally divides itself into the diagnosis of acute attacks of gout and of the gouty diathesis, constitution, habit, or whatever else we choose to call it.

Acute gout arising for the first time in a comparatively young person can very easily be overlooked by us in this country because it is not at all common in our experience. The points to be considered are the time of the attack, the location of the pain, its character, the nature of the inflammation, and the fact that the inflammation is followed by desquamation of the cuticle. The attack usually occurs without previous foreboding in the early hours of the morning. The pain, located, as a rule, in the metatarso-phalangeal joint of the great toe, is very severe in character. The tissues of the joint will be acutely inflamed, swollen, and intensely congested. Accompanying the attack there will be a slight rise in temperature, which increases slightly after the attack has lasted a while. Toward the afternoon of the following day the fever subsides and the pain is a good deal relieved, but the symptoms recur the next night, and the attack goes on in this way often from five to eight days, gradually wearing off. The inflammation may involve the great toe of the opposite foot or other joints. Now there occurs what will confirm our diagnosis, and that is the desquamation of the epidermis of the part inflamed. The term "suppressed gout" is applied to a series of symptoms not typical of gout, but which occur in a person subject to gout, and which from strong *negative and positive* evidence we suppose to be gouty in origin. These attacks of suppressed gout are worthy our close study because they must occur sometimes in our practice, and can so easily be overlooked. They may immediately follow an attack of acute gout, or replace an attack. The patient may have severe vomiting, pain, diarrhœa, and profound depression, or there may be cardiac failure, manifested by dyspnœa, irregular action of the heart, and pain referred to the heart or to the left shoulder. We should remember that these attacks of so-called suppressed gout may occur independently or replace an attack of acute articular gout. Here it is that a great difficulty of diagnosis occurs, and the best that we can do is to keep this in mind as the possible cause when we see obscure, severe, and often fatal cardiac attacks accompanied by extreme dyspnœa, with failure of the heart's action in force and rhythm. Our training in this country leads us to attribute all these cases to uræmia, and we go so far as to classify cases in which there is an absence of albumin in the urine and many other of the typical signs of kidney-disease. It would seem that at least a few of these cases were cases of suppressed gout.

Nor is the diagnosis of the gouty diathesis easy or one upon which all observers will agree in every individual case. Just what the condition is from is also a matter of discussion, but that there is such a condition is not a matter of dispute.

Dr. William Draper said, in a discussion on gout occasioned by a previous paper, that the "gouty habit is a constitutional vice, a vice of nutrition." We say that a man has gout because he has too much uric acid in his blood; but the close rela-

tion between diabetes and gout suggests the idea that the former is a condition of imperfect combustion of carbohydrates, and the latter of proteids. This seems to give a good working hypothesis for the understanding of these diseases. In the same discussion Dr. F. P. Kinnicutt said: "I believe that gout exists in America to-day to a very large extent, and I should say that probably it exists more frequently in the irregular than in the typical form. We do not see so much in the hospital as in private practice. What I see in private practice perhaps more frequently than any other manifestation of it is both the typical and irregular forms in women, particularly as they approach the climacteric. I think that about the approach of this period you will find in very many women all the manifestations of gouty trouble."

The diagnosis of chronic gout following a series of acute attacks and gradually settling down to a permanent condition is easy enough, but this is not the beginning that we usually find. Like Bright's disease, a very large number of cases are gradual in onset, and it is hard to say just where they began. This is especially true of the cases in which the articular symptoms are not very marked. In articular gout the picture of a chronic case is very typical. We have the deposits of concretions about the joints with the skin over the tophi becoming stretched and often discharging so-called chalkstones. The subject of such a condition is usually anæmic, poorly nourished, and in addition has those signs which follow in endarteritis, namely, high-tension pulse, an increased quantity of urine of low gravity and containing a trace of albumin. In studying hospital reports some years ago I was struck by the extreme rarity of diagnosis of gout and the frequency of the diagnosis of chronic diffuse nephritis. It would seem that the microscope had concentrated our gaze too much upon kidney-pathology. It is a teaching of some, or at least the impression given students, that many of these cases are primarily cases of nephritis, and that scleriasis of the vessels with the accompanying condition is secondary. Certainly a good many of these cases are cases of gout, or at least of the gouty diathesis, and should be treated, especially at the beginning, as cases of lithæmia. The importance of early diagnosis is that the avoidance of sclerotic conditions depending upon gout depends upon a proper management of the underlying vice of nutrition.

The discussion of the diagnosis of gout would not be complete without a consideration of some of the more irregular manifestations. These may be nervous, gastric, cutaneous, pulmonary, or may affect the organs of special sense. Their irregular manifestations are as often due to hereditary tendencies as to acquired gout, hence we see them often in very young people. The gouty habit or lithæmic state may even appear in infants. Infantile eczema may sometimes be due to hereditary gout when it is unusually obstinate to treatment. In older people cutaneous affections are very closely allied to this constitutional vice. So firmly is this belief held in these days, that no one would think of treating chronic psoriasis without attention to diet; but skin-affections are not always gouty, and the effect of diet and the modification of other conditions of the system upon the course of the disease should be studied before arriving at the conclusions that any particular skin-disease is due to gout.

While writing this there comes through the mail a pamphlet on psoriasis, in which Dr. L. Duncan Bulkley, in speaking of the relation between gout and these very troublesome skin-affections, says:

"It is often very difficult to determine with certainty the underlying causes which operate to produce the eruption, for it is observed in those presenting widely diverse conditions of life and under the greatest variety of circumstances. It develops with about equal frequency among the poor and the rich. Not only will it appear after exhaustive diseases, after pregnancy, and in those debilitated by various excesses, but it comes also in subjects who are apparently in the best of health and enjoying the surroundings of a healthy and apparently proper life. No single cause or element, or any combination of causes or elements, can be traced in every case.

"The evidence increases, however, that it is more or less closely allied to the blood-states which are known as the gouty and rheumatic."

The gout-factor in the production of pulmonary affections and affections of the organs of circulation is also pretty clear, for gout is certainly often a factor in the production of chronic bronchitis and in the sclerosis of vessels and valves, which is so familiar as the cause of those diseases of the heart and bloodvessels which are of gradual onset. That chronic bronchitis is often due to gout might be inferred from the fact that it occurs so often in gouty people, and that it is sometimes ameliorated by a course of treatment for the underlying constitutional state when more direct methods have had but little effect. Gastro-intestinal disorders are often of a gouty origin. This is especially true of attacks of biliousness in which the tongue is dirty, the bowels constipated; headache and all the other usual symptoms are not only present, but rather persistent. When these bilious attacks occur with unwonted frequency and are not modified by ordinary treatment, it is well to investigate for other evidences as to the gouty diathesis. To some of the nervous manifestations we have already alluded in quoting some remarks of Dr. Kinnicutt.

The nervous manifestations of gout may be divided into two classes, the immediate and the remote. The immediate are such as are due to the effect of

sodium urate circulating in the blood and coming in contact with nervous elements or being deposited in them; the secondary effects are due to the gouty ravages upon tissues in the neighborhood of nerves or upon the bloodvessels by which the large nervous centres are nourished. Perhaps the commonest manifestation of gouty state in its recurrent form is a migraine. The investigations of Haig caused him to come to certain conclusions after elaborate clinical and chemical investigations. After trying a great variety of alternations of diet, he gave up all butcher's meat and replaced it by milk and fish. On this diet the headaches disappeared by the intervals becoming longer, until finally he went eighteen months without an attack of notable severity. In searching for the cause of this phenomena he discovered the relation between his headache and the excretion of uric acid, and means by which he could control the excretion of uric acid from day to day, or from hour to hour, and that in altering the uric acid he could alter the symptoms relating to it. He noticed that when he produced the headache, mental depression, etc., there was an increased excretion, and when he stopped the plus excretion with an acid he removed all these symptoms. But he noticed that in curing the headache by giving the acid he produced a certain amount of shooting-pain in the joints, the meaning of which probably was that the uric acid which failed to appear in the urine must have been held back in the joints and produced pains. The headache depended upon the absolute quantity of uric acid circulating in the blood.

Haig's interpretation of the phenomenon is as follows: He supposes that gouty symptoms are due to an accumulation in the body of uric acid depending upon a diminished excretion. He points out that if excretion falls behind secretion by a minute quantity, in the course of time there will be an accumulation. He supposes that so long as this accumulation is quietly stored up in the tissues there are no constitutional symptoms, but when for any reason this is liberated and circulates in the blood the symptoms appear, and naturally enough an excess appears in the urine. This theory certainly explains very well the increased excretion that he observed at the time when symptoms were present or imminent. This also explains the periodicity of attacks. He believes that in persons in whom the balance of secretion and excretion is but very slightly deranged there is a very gradual accumulation, and that such persons will suffer from gout in some of its more obscure forms after years have elapsed.

In practice, however, we would not wish it to be thought that gout is by any means the cause of all or even the majority of cases of migraine. This most interesting affection, in all probability, has a number of very different origins. Neuralgia affecting the sciatic nerves, the intercostal nerves, the fifth nerves, or, more rarely, other nerves, are often gouty in origin. The gouty subjects are also liable to neuralgic pains of a shooting, drawing character, lasting a moment and then disappearing in almost any part of the body. They also suffer from visceral pains of a neuralgic character. A true neuritis most commonly affecting the sciatic nerve is common in gouty subjects, especially if alcoholic. In speaking of the more or less indefinite nervous symptoms of gout, Gowers says "that cases which may be regarded as functional are those in which symptoms, commonly subjective in character, result from some morbid blood-state."

Occasionally there is definite failure of power, lasting for a few days or weeks, without objective symptoms, and passing. But the most common symptoms from this cause are sensory and subjective, feelings of tingling and formication in the legs, dull aching, and sometimes actual pain; this is usually transient, but occasionally continues for some days or weeks, varies in position, but in gouty cases often felt in the heels. Symptoms due to morbid blood-states, like other symptoms of the same class, are especially common in persons who inherit a tendency to gout, but have not suffered from attacks of definite arthritis. Indirectly due to gout are the effects of the interruptions of circulation which go with gouty endarteritis. The thickening of the cerebral arteries may give rise to attacks of dizziness, temporary loss of consciousness, and even impaired mental conditions. When a condition of endarteritis sufficient to cause these symptoms is present, there is, of course, great danger of thrombosis and an accompanying destruction of brain-matter, with symptoms corresponding to its location.

Of the effects on the special senses, due to gout, we will speak briefly. It may attack almost any of the tissues of the eye. As a cause of conjunctival irritation it seems to be quite frequent. Iritis, though perhaps more commonly rheumatic, may still be due to gout. Even glaucoma has been attributed to it, but the evidence is not very strong.

Gout as a cause of deafness is sometimes due to urates being deposited between the layers of the membrana tympani. Gouty subjects are especially liable to inflammations of the throat and larynx, and to catarrhal conditions generally, but there is no direct evidence that it is more than the increased liability which would come with the depressed vitality of a constitutional disorder.

The manifestations of gout have not by any means been covered by this enumeration, but we must pass now to a brief consideration of the man-

agement. The word management, as a name given to our efforts to bring about a cure of gout, is better than the word treatment, because treatment carries with it a trace of an idea of a specific plan of medication. It is a trite remark that the management of gout is chiefly a question of hygiene, and that though the value of drugs cannot be disputed when applied to proper cases at the proper time, still no one drug is always available. To a condition like this we are apt to apply the statement that its management is chiefly a question of hygiene. A good many persons, both laymen and physicians, fall into the error of supposing that a hygienic treatment is easy of accomplishment. This is a deep error. The cure of a disease by the modification of patient's surroundings and the habits of action of his organs may well tax the patience, knowledge, and ingenuity of his doctor. Hygienic treatment includes not only the modification of air, mode of life, food and drink, but the skilful use of drugs, which are directed to the improvement of the physical action of the organs. It does not seem quite philosophical to include tonics, blood-foods, and laxatives under the head of a drug-treatment of the disease.

The first question that arises is that of food. We must modify the popular notion in regard to different classes of food. We are not in a position to draw a line between carbohydrates and proteids. Clinical evidence is brought forward by Dr. William H. Draper and others that some gouty patients do well on animal-diet, controverting the theoretical conclusion that meat is to be avoided. The safest hypothesis upon which we can work is that in gout there is an impairment of the chemical powers of the body, which in different patients affects somewhat different processes. Some hold that it is a question of deficient oxygenation, so, of course, we think immediately of remedying the defect by supplying more oxygen. This we attempt, but we must also take pains that the amount of these foods, concerning which there is a failure of chemical action on the part of the body, shall be in as small a quantity as possible.

In discussing the previous paper already alluded to at the New York Academy of Medicine, Dr. William H. Draper said:

"Shall he confine himself to starchy foods and take as little proteid food as possible, or shall he take proteid food with the proper proportion of starchy food? My own experience leads me to think that a gouty person does best upon a diet in which there is a good proportion of proteid food, but that he should have a fair amount of starchy food as well. Gouty persons digest proteids freely, but the carbohydrates are exceedingly difficult of digestion.

"Now, in regard to sugars, sweets of all kinds, in gouty persons, what has been your experience? There is an inability in gouty persons to digest a large amount of sweets; often they have to forswear sweets. They may indulge in spirituous drinks and suffer no inconvenience, but if they take fermented wines they suffer, and how? They have eructations of wind and are made very uncomfortable by it. Or they may suffer some of the nervous symptoms of gout as a consequence of a glass of wine or beer. Many gouty persons learn to shun the fermented preparations of alcohol. The gouty person may take distilled liquor, while he cannot take it as a fermented preparation. This is, I think, a very striking fact in the history of gouty people and one that complicates very much a uric-acid theory of the disease.

"Now, in regard to starches. It is a very curious feature—but it is one which experience confirms—that there are persons who cannot take much starch, who are made uncomfortable thereby by nervous troubles as well as by the physical distresses to which they render themselves liable. This is especially true of potatoes. The simple injunction, 'Don't use potatoes,' is often of great value to the sufferer from gout. There is something in the vice of nutrition from which gouty people suffer, which is above and beyond the question of ingestion of food. What this is we do not now understand; but I believe that some day we shall understand why it is that gouty people, who ought to eat starchy food, cannot eat of it, and can eat proteid food."

After all, the diet which Dr. Draper has found by his long experience to be best can be brought within a line of theory by considering that by not overtaxing the digestion with carbohydrates its forces are more at liberty to take care of the proteids. We will not attempt at this time to give a dietary, because in truth that must to a large extent be worked out for the individual case. We must study food from the theoretic side, but in the presence of the disease each patient must be studied by himself.

The drug-treatment of gout is not a specific treatment. After we have controlled as far as possible the supply of foods to be taken care of, we attempt to modify favorably the chemistry of the body, and here the probable philosophy of mineral-waters becomes plain. Nearly all chemical operations are carried on with water as the vehicle for the chemical agents and reagents. Every chemist knows that in seeking a chemical result the reaction of the fluids—that is, its degree of acidity or alkalinity—must be right. Now by supplying to the system fluids in abundant quantities, especially if these fluids tend to modify favorably the reaction of the system, we are certainly benefiting the chemistry of the body.

Lithia seems to have vindicated its right to a place among useful drugs in gout. Its action is probably not, as was formerly supposed, principally by increasing the solubility of sodium urate, but it seems to have also a catalytic action; that is, by its presence it favors the action and reaction of the fluids of the body to a degree out of proportion to its amount. In giving lithium, and this remark may be applied also to other drugs, it should be given in definite amount. There is no magic in native mineral-waters. Artificial waters are just as good, and have the advantage of a definite formula and safety from possible infection in rural neighborhoods. We would not think it necessary to unfold this doctrine to a

patient to whom we thought the surroundings, the mode of life, and mental effect of a watering-place were necessary, but scientific truth is not modified by popular beliefs. And the verdict of the laboratory upon the absence of any magic combination in native waters is positive.

Colchicum has been shown by clinical experience to be of great value in controlling the symptoms of gout. It relieves the pain of acute attacks and modifies the course of chronic cases. It is an English tradition, still held, that the suppression of acute gout by colchicum is liable to the production of dangerous internal diseases. Between the paroxysm colchicum can be given from day to day with apparent benefit. Piperazine is a drug that is attracting so much attention that it cannot be passed without mention, but conclusions are not yet positive. Besides these drugs iodide of potassium in chronic gout is the only one well established. The drug-treatment of gout is so much a question of adapting the well-known therapeutic agents to particular conditions that details are best left to individual judgment. Thus we see that gout is a disease which may manifest itself in a great many different ways, and the recognition and management of which must always be of great interest to physicians in every department of the profession.

THE RELATIONS OF RACE AND CULTURE TO DEGENERATIONS OF THE REPRODUCTIVE ORGANS AND FUNCTIONS IN WOMAN.[1]

BY DANIEL G. BRINTON, M.D.,
OF PHILADELPHIA.

THE results of degenerations of the reproductive organs are of equal interest to the physician and sociologist. The former finds in them the fertile sources of diseases involving the whole system as well as the special portions involved, while the latter must trace to them many of the pathological phenomena which appear in the body politic.

For many years the diminished fertility and increased ill-health of American women have attracted the attention of observant medical men in the United States, notably shown in the statistics published by Dr. Nathan Allen, of Massachusetts. In France the stationary character of the population or its actual retrogression in number has excited the alarm of patriotic men, as is illustrated by the work of the Marquis de Nadaillac, entitled *The Nation's Danger* (*Le Peril National*). It is an error to suppose that the small families or total childlessness of many marriages among the wealthier classes of France and the United States is due mainly to Malthusian principles and "preventive checks." It occurs also where these are not adopted, and has a far deeper root than the love of ease and freedom from maternal care.

This has been recognized by not a few social philosophers, as, for instance, Herbert Spencer, Schaaffhausen, and others, who have set up the maxim that the increased mental and moral development of women in modern times necessarily leads to degeneration of her reproductive powers by diverting from them the chief activity of her nervous system.

A comparison of the birth-rate between the married women of higher culture in France and the United States with that prevailing in primitive conditions seems to support this view. The observation of Dr. Boas among the native Indians and the half-breeds on our reservations shows that the married women of forty years of age have had as a rule seven to eight children apiece; whereas in the class of Aryan whites referred to five accouchements at term by that age would seem to be an average. To be sure, among the whites, there is a considerable difference between the upper and the lower classes, and between those of one stock and another; but these facts do not militate against the maxim above quoted.

It does not require arguments to prove the largely increased prevalence of uterine displacements and diseases in highly cultured women, both married and unmarried; nor to emphasize the well-known and remarkable ease of parturition enjoyed by the savage woman in contrast with her civilized sister. We must look upon these as parts of the complicated processes of domestication. The same contrast is seen in the lower animals. The high-bred Silesian ewes of Saxony can scarcely drop their lambs without artificial assistance; "pedigree" cows, bitches, and mares are always greater sufferers in natural labor than the lower and wild varieties, and the mortality among them from the sequelæ is higher.

If we seek to analyze precisely what factors lead to this condition, we may classify them as follows:

The Pelvis. The shape of the pelves of the two sexes differs but slightly before puberty. At that epoch the following changes should take place:

1. The pubic arch of the female should assume a wider span, increasing from an angle of about 60°, which it retains in the male, to about 80°.

2. The coccyx should retain its mobility, which becomes lost in the adult male.

3. The horizontal diameters of the pelvic cavity should increase, giving the basin a more extended capacity.

In the perfectly developed modern white woman these changes take place; but they occur in a much

[1] Summary made by the author for THE MEDICAL NEWS of a paper read before the Anthropological Section of the Academy of Natural Sciences, Philadelphia, January 10, 1896.

less degree in the women of the lower races. Among the Australians and Indonesians it is often impossible to distinguish between the adult pelves of the two sexes. But in highly civilized conditions the development of pre-natal life is more rapid and complete, and space is demanded for its activities. Especially the head of the fœtus at term is larger, and a wider pubic arch is required if the child is to be born alive. Hence it is that the span of the pubic arch in woman becomes the criterion and the necessary condition of racial progress—of the evolution of the human species.

The Menstrual Function. It seems an accepted fact among gynecologists that a high moral and intellectual education tends to postpone the appearance of the menses. That there is also a positive increase in the number and severity of cases of dysmenorrhœa and sympathetic catamenial disturbances among the higher classes is generally acknowledged. Especially may attention be directed to the prolonged and troublesome symptoms connected with the climacteric period. There can be no doubt that these, which incapacitate so many patients for years, are almost unknown in primitive and simple conditions of life. They are the reflex of debilitated function.

The Lacteal Function. A woman under her natural relations should suckle her own children, and is the better in health for doing so. Obstetricians are, however, well aware that it is by no means selfishness or lack of maternal feeling which obliges so many mothers among us to have recourse to wet-nurses or "the bottle." It is that their milk is insufficient in quantity or deficient in quality, or the strain of lactation is too severe on their constitutions. There is, in other words, an obvious impairment in the function of lactation.

The Muscular Structure. Tedious labor and inefficient pains are frequently caused by a lack of development of the uterine muscular fibres. They are common symptoms of parturition among cultivated classes and the higher races; scarcely known among the American Indians and the African negroes. This condition is related less to the general muscular force than it is to a diminished nerve- and blood-supply to the genito-urinary system.

Undeveloped and Adherent Clitoris. The clitoris is well developed in most anthropoid apes and also in the negro race. Among the Hottentots the labia minora and præputium clitoridis are sometimes eight to ten inches long, forming what is called the "Hottentot apron." On the other hand, in Aryan American women the clitoris is very small, as a rule, and the prepuce often adherent. This fact has been recently pointed out by Dr. Robert T. Morris, of New York City, in a note to his "Lectures on Appendicitis." His investigations prove that almost 80 per cent. of Aryan American women have preputial adhesions, and that this condition, through reflex action, tends to produce such an impression upon the nerve-centres that the whole sexual ap paratus is influenced toward degeneration. The Semitic women in this country, on the other hand, show very little tendency to this condition, and Dr. Morris raises the inquiry whether this does not indicate that, as a rule, they are destined to outlast the Aryans?

Sexual Feeling. Deficient or absent sexual feeling predisposes to infertility, and must be regarded as a degenerative symptom. Whether or not the cultured women of the present day have materially lost this feeling, or only keep it more under subjection, it is not easy to decide. Special students of women, such as Ploss, Bartels, and Ellis, speak in favor of the latter view; while Spencer and many others assert that sexual passion in woman has decidedly diminished under civilization. The novelist, Henry James, an acute observer, calls the average New England girl "passionless." Certainly, compared with primitive life, the woman of to-day reveals few signs of sex-feeling. The American Indian women were often subject to epidemics of desire, and the Bacchantes of ancient Greece gave unrestrained liberty to their erotic longings. Only in sexual perverts and distinctly pathological instances do we see anything of the kind to-day. The inference is reasonable that not only has the sexual passion decreased in women, but often to such an extent as to render them indifferent or averse to marriage, and thus to reproduction.

The conclusion from such facts forced upon us is that a series of changes has been gradually taking place in the reproductive organs and functions of woman, the general tendency of which is to reduce her procreative capacity, and that these are more permanent and extended in the Aryan stock than elsewhere.

CLINICAL LECTURE.

CLINICAL LECTURE ON INSANITY.[1]

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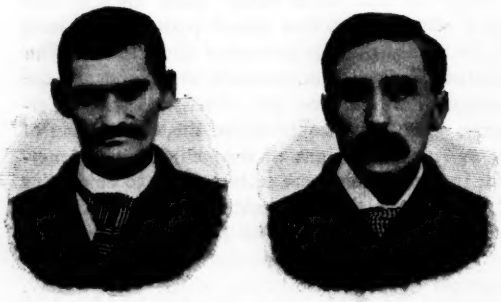
GENTLEMEN: The first two cases I will present to you I consider interesting, because in many respects they present similar symptoms, yet belong to entirely different forms of insanity. This is L. C., this J. O., both about thirty-two years of age, farmers, education limited, fair physical condition. L. C. has been insane about two years, and his mother was insane. J. O. has been here since last April, and has one imbecile sister. I

[1] Delivered before the Southern Illinois Medical Association at its Twenty-first Semi-annual Session, held at Anna, Ill., November 22, 1895.

know nothing of his history except what I have stated. We have probably heredity in both cases.

Now for the similarity of symptoms; both have delusions of persecution of a religious nature. L. C. says that he has committed the "unpardonable sin," that there is not any hope whatever for his salvation, and that his soul is hopelessly lost. J. O. says that he has been a very wicked man, that he is the chief sinner, and that his sins have been great and many. Each feels that he is imprisoned in this hospital because of his sinfulness; that this is the Lord's punishment. Both are emotionally depressed; their faces express that fact. There is in neither case any excitation of ideas or emotions. There is no impairment of memory or will-power. On any subject but religion they speak sanely. Now, gentlemen, so far our pictures are quite similar, and I choose these cases because the same diagnosis has been made in both—erroneously, however.

FIG. 1.



J. O. L. C.

Now for the dissimilarity: L. C. does not admit any possibility of his soul being saved. J. O. is in doubt, and is constantly debating the question as to his eternal welfare; sometimes feeling hopeless, again hopeful.

There is more depression in L. C.'s case. He prefers to be alone. J. O. is more companionable. L. C. does not think that his punishment will atone in any way for his sins. J. O. thinks the punishment will in some way redound to his credit or advantage. This is characteristic of this form of insanity; no matter what they consider the persecution or whom the persecutor, they usually think it will bring them some credit or advantage in the end. L. C. believes himself worthy of his sorrow, while J. O. thinks that his punishment is too severe and is more rebellious.

L. C. thinks that anyone who has sinned as he has would be lost. J. O. thinks he is the chief sinner; is the persecuted of mankind. Do you not see how his egotism crops out, even in his persecutive delusions? L. C.'s conversation on any other than religious subjects is more or less colored by his delusions, but J. O.'s is not.

Now, gentlemen, we come to the physical signs: L. C. has a well-shaped head, measuring twenty-two and one-half inches in circumference, well-developed frontal region, and symmetry of head and face. J. O. has a head-circumference of only twenty-one inches, rather low and narrow forehead, prominent cheek-bones, small ears, protruding lower jaw, and on opening his mouth I find a saddle-shaped palatal arch. In fact, the physical marks of defective development.

L. C. is a case of melancholia religiosa. J. O. is a case of paranoia religiosa, in the persecutive stage.

This case of J. O. is in a transitional stage. Were it fully developed the differential diagnosis would be a very simple matter, because then they would be exactly opposite types of insanity.

One of these days J. O., because of a visual hallucination, a dream, vivid emotional experience, reading of some passage in the Bible, or some fortuitous circumstance, will believe himself to be a prophet, the blessed of Heaven, or a Christ. His emotions will become pleasurable, ecstatic.

Gentlemen, before introducing some cases of paranoia, just a few words. Paranoia is a form of disease occurring in one of a congenitally defective nervous organization, which manifests itself by logical or systematic delusions of persecutions and self-exaltation without excitation of ideas or emotions, impairment of memory or volition.

There are infinite types of paranoia. The one I now introduce to you has delusions of both persecution and grandeur. This case is fully developed.

This is H. K., a young man with a bright, receptive mind, aged twenty-four years, admitted only a few days ago, duration of disease four years, always been eccentric. I have no history as to heredity. You will notice he has a poorly developed head, the circumference of which is large enough, being twenty-two and one-half inches, but the antero-posterior diameter is out of proportion to the lateral. His frontal development is deficient, and out of proportion to the occipital.

This patient has the delusion that he is a second Christ, that he has a mission to perform as yet not known, that will be revealed later. He is egotistical and thinks he is persecuted by his mother and brother, who are jealous of his superior talent and genius, and would much prefer these blessings had been bestowed upon a brother who is now attending the University of Michigan. His delusions are systematized and limited, which should be the case in paranoia. On all other subjects he speaks intelligently. This young man otherwise is really bright. He completed his education at one of our State normals.

The next case of paranoia is H. F., whom we call "Professor," an appellation of which he is very proud. He is forty-seven years of age and has been here twenty-five years. He was a school-teacher. His father was neurotic.

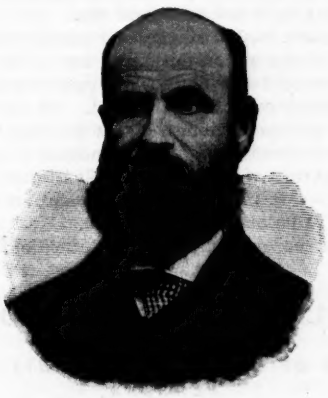
"Professor" has fixed, egotistical, and persecutive delusions. I will ask him to tell you what he thinks of himself.

Professor: "I am the smartest man in the world and as superior to the ordinary man as man is to the lower animals. I am destined to be the progenitor of a new race, just as Adam was of the people who now inhabit this world, but I have always been persecuted by the witches."

I will now ask the "Professor" why he thinks he is persecuted by the witches. I do this to illustrate a systematized delusion, one that is explained and defended. In acute mania or paresis the delusions are unsystematized, and if I ask such a patient the question, "Why do

you think you own the world?" etc., he cannot give me any plausible reason.

Now, Professor, tell the gentlemen why you think you are persecuted by the witches. Professor: "Well, you see it is like this: The witches have a power over me and will not give me a chance to marry because they fear I will start a new, superior race of people who will be able to cope with and overpower them."



"The Professor."

This case well illustrates one thing Dr. Runge, of St. Louis, told you this morning, namely, one suffering from paranoia does not usually drift into dementia as do the other forms of insanity, at least if he does the progress is slow. This man has been insane twenty-five years, and is just the same now as when admitted so far as mental ability is concerned.

This is H. T., a different type from the preceding ones. This is erotomania, so called, but it is only a form of paranoia. His age is thirty-one years, occupation teacher, paternal aunt insane, and father intemperate. He has been here and at Jacksonville a number of years. He is one of those fellows you often see whose egotism finds vent in aspiring to the hand and love of a lady far above him socially and financially. They never become discouraged, but think and dream of their loved ones constantly. They are often given to poetry. This man writes letters and poetry to a lady of social prominence, which, of course, we never send.

If he has any delusions of persecution, I have never been able to detect them. Perhaps earlier he did, and has lost them, for it is sometimes the case that the delusions of persecution become effaced. It was not so in "Professor's" case, however, he having retained his twenty-five years.

This is W. R., aged twenty-nine years, admitted eighteen months ago, always considered peculiar. His mother was insane. He has delusions of persecution, differing only from J. O. in that his are not religious in character. He imagines every now and then that some other patient, usually a quiet, inoffensive one, "has it in for him," as he expresses it. He will interpret a whisper or gesture that has no relation to him as inimical, and plead to be removed to another hall. Otherwise he is bright, active, and seemingly sane.

He, as well as J. O., is probably in a transitional stage, and later will develop egotistical delusions. Even now, the attendants tell me, he is inclined to be conceited and feels that he is superior to other patients.

The next case is C. F. Nothing is known of his history; was a tramp picked up in Fayette County and brought here. He says General Grant appointed him Commander-in-Chief of the United States Army and Navy. I show this case because his delusions of persecution depend upon an hallucination; *i. e.*, he says his enemies are trying to keep him out of this office, and have been trying to poison him; and he thinks this because he imagines that he tastes the poison in his food, an hallucination of the sense of taste. So much for paranoia.

Now a few words about paresis before I show you some interesting cases. The word paresis has several synonyms, namely, general paralysis of the insane, paretic dementia, dementia paralytica, and in popular language "softening of the brain," although this is a misnomer, because while it is true the consistency of the brain is less firm, there is never a true necrotic softening. Paresis is a structural disease of the brain; briefly, it is a degeneration of the cortex and a low-grade inflammation of cortex and membranes.

It is a disease displaying slowly increasing mental impairment, disorders of muscular movement, disturbances of higher reflex action, physical and mental decay.

The principal causes are syphilis (three out of every four cases we receive having syphilitic histories), intemperance, excessive venery, indirect physical and emotional causes, and trauma. In other forms of insanity we find ordinarily mental symptoms only, but in paresis we have both physical and mental well marked.

The principal mental symptoms are delusions of grandeur (although they are sometimes depressive, or the two may alternate), change of character, loss of memory, and impairment of volition. The emotions are usually exalted, but they too may be depressed.

The most prominent physical symptoms are inequality of pupils, difficulties in articulation, inco-ordination, muscular tremors, epileptiform and apoplectiform convulsions, and finally paresis.

The first case I show you is R. R., aged thirty-three years, occupation brakeman, duration eighteen months, syphilitic, intemperate, Keely graduate, no heredity. These cases usually do not show hereditary histories. They have in most cases well-developed heads and brains. There are three stages of paresis: First or prodromic; second or stage of expansive or depressive delusions, accompanied by well-marked physical symptoms; third or stage of dementia.

This man is in the second stage. I will ask him to tell you what he owns. He says "The world, etc." You will notice how he drawls his words, hesitates in speech, the excessive motility of facial muscles, the tremors. Now while he walks please observe the ataxic gait—how his feet are kept apart to widen the base of his support. I test his eyes and they do not respond to light or accommodation; his patellar reflex, you see, is abolished.

The next case is A. A., aged thirty-four years, occupation merchant, no heredity, duration eighteen months, syphilitic and intemperate. He is also in the second stage. His delusions are not quite so extravagant and

his memory much better than the preceding case, but on asking him to talk he tells you what a scholar he is—reads, speaks, and writes all languages.

You notice, as in our preceding case, the well-marked physical symptoms, namely, difficulty of articulation, prolonging his words, tremors, ataxia, and loss of patellar reflex. His face presents a soggy appearance, and this is often present in these cases. When he came here he said he would pave the streets with gold, etc.; but after being here several months he had a remission, and all mental symptoms disappeared. And here let me say, in these cases remissions are often seen for a few months or even years. Their friends often begin to think they have recovered, but it is a false hope.

The physical symptoms, though not so pronounced through the remissions, usually linger to some extent, as is shown by the tremors, gait, and speech.

The next case is C. W., ex-member of the Legislature, abstracter, a wealthy and prominent man, who has been very intelligent and highly educated, aged forty years, duration three years, no heredity, syphilitic, intemperate, and in the second stage. He shows a general mental weakening, and is more emotional than the preceding cases. He has had delusions of grandeur, but has not now. You notice the physical symptoms are not marked. When he speaks, however, you see excessive movement of the lips. This case is slower in progress than the others, and he is much more destructive. You know the average duration of life—for this is a fatal disease—is only three years. They are usually not committed to us until they have been paretics for some time. The average duration of hospital-life is only twelve or eighteen months.

The next case is L. C., merchant, aged forty-three years, no heredity, duration two years. He is not syphilitic or intemperate, a man of good morals; so we must look elsewhere for a cause, and here we have it. You remember I mentioned trauma as one cause. Well, here is a linear depression on this man's forehead, caused by a blow which preceded this attack. When I came here, less than three years ago, they had but one case of paresis, and it also developed from a traumatic cause. Since then we have admitted twenty-two cases, so it seems to be decidedly on the increase in our territory.

This case of L. C. I show you to illustrate a case passing from the second into the third stage. This man thought he had millions only a few weeks ago. His talk now is incoherent, and he is rapidly passing into dementia.

This case well illustrates the necessity of an early diagnosis, not only because remedial or surgical measures might be more successful, but so you can warn their friends of the possible line of conduct such cases may pursue. This man, before his condition was known to the public, feeling so wealthy, burned notes and money, gave too much change in return, and other unbusiness-like methods, until he became bankrupt.

The next case is L. K., aged thirty-two years, butcher, duration two years, syphilitic, intemperate, no heredity, and a Keely graduate. We have about five cases of paresis who have taken some one of these "whiskey-cures," and the "cure" is often blamed by their relatives for causing the insanity; but I believe the soil has already been prepared by the syphilis, by the years of intemperance and excessive venery, and that they would have developed paresis anyway. Again, if it is due to the "cure," why is it the other forms of insanity do not develop? Why should my cases who have taken the "whiskey-cure" each give a history of syphilis and intemperance?—the very causes of most cases of paresis, if the "cure" is the causative factor. I give this only as my own limited experience; other observers may have had a different one.

This patient has an exaggerated patellar reflex, quite opposite to the others, this being due to the involvement of the inhibitory fibres which pass from the cortex to the anterior columns of the cord. He also has contractures and ankle-clonus, so that the lateral columns are also involved; and that reminds me I had a very interesting case of ascending or spinal paresis to show you, also a case in the prodromic stage, but both were removed on furlough a few days ago.

I thank you, gentlemen, for your attention.

CLINICAL MEMORANDA.

A CASE OF BRONCHO-PNEUMONIA IN THE NEWBORN.

BY HENRY BIXBY HEMENWAY, A.M., M.D.,
OF EVANSTON, ILL.

A FEW weeks ago I was engaged by a healthy young couple to attend the wife in her second confinement. Notice that my services were required was served upon me on the afternoon of November 3, 1895. I called about 5 P.M. and found Mrs. A. in the parlor talking with the nurse, who had just arrived. While I was there she had a couple of pains, but I made no examination at the time for the reason that I believe a vaginal examination often hastens a labor, and I preferred to have a little delay for reasons of my own. On the other hand, I was satisfied from the history given and from watching the patient during pain that I could safely leave her for a time, especially since I could be easily summoned by telephone if needed.

I returned and made an examination at 7.15. I found the os uteri slightly dilated. There was no "bag of waters." To the best of my judgment I had to deal with a breech presentation in the S. L. P. position. For this diagnosis I was almost as much dependent upon external palpation as upon vaginal examination. After giving some further directions I left, promising to return shortly after 9.

When I again reached the house, at 9.15, I was informed that they had telephoned for me within five minutes, about which time the body was born, but they had been unable to extricate the head.

Mrs. A. was lying upon her back and the child prone between her limbs. I had no difficulty in extracting the head by means of my index hooked over the lower jaw and with the body elevated.

I found the child in a condition of asphyxia pallida. Every muscle was relaxed. There was practically no pulsation in the cord and the heart of the child was only beating about forty times a minute and very feebly.

I immediately wiped out the pharynx of the child,

but was surprised to find it relatively dry. I immediately cut the cord and began artificial respiration by the methods of Schultze and Sylvester, and also by a method which I have long used with good results, but which I have never seen described until recently. It is performed as follows: The child lies supine upon the operator's palms, its head being supported by his right thumb and index. The operator rotates his hands, first elevating the ulnar side, thus permitting the chest to expand and the lungs to fill. Then flexing the child upon itself the air is expelled.

I also tried traction upon the tongue, and several times I passed my finger covered with a handkerchief into the pharynx. I slapped the body, especially over the heart. I used alternately hot and cold water, both in dash and plunge. In spite of all this every muscle remained flaccid. There was not the slightest reflex apparent nor evidence of revival. Not only so, but I could get no evidence that by any of the methods tried any air had entered the lungs. Apparently I had to do with a genuine atelectasis. The lung-cells had perhaps become agglutinated, needing something more than ordinary atmospheric pressure to open them.

I put the child upon a table, holding its head upon my right hand slightly lower than the body. My left hand I laid upon the abdomen, with my fingers on one side and my thumb on the other side of the thorax. I then carefully filled the lungs by air from my own mouth. As soon as the chest was full I compressed it with my left hand. After about half an hour's work the child gasped, and the gasps became more frequent until about 10 o'clock she was breathing. I alternated this method of artificial respiration with the others, and after I had once inflated the lungs I forced a little bloody mucus from the nose by the Schultze method.

I had the child oiled all over with warm lard and then I rubbed her with warm flannels. She frequently stopped breathing, and even with the care taken she was getting cold. At last, however, she was breathing regularly, though rapidly, and the body was warm. There were some coarse mucous râles in the bronchi.

After 1 o'clock the household quieted down for the night. The next morning I was informed that the child had rested well and nursed strongly. At 5 P.M. the baby still seemed to be doing well. She had urinated and defecated. She had nursed several times. There were still the mucous râles. I had the nurse put the baby over her shoulder so that I might more easily listen at the back of the chest. While I was doing so the baby put her fist in her mouth and sucked it strongly.

About 10.30 P.M. the child was lying in her mother's arms for sleep. The mother thought she did not seem natural and aroused the household. When I reached the place half an hour later I found the baby's face very dusky. Pulse and respiration 70, the alæ nasi distending strongly with each inspiration. Temperature taken in the axilla 106.1° F. I made, of course, an unfavorable prognosis, considering the case one of broncho-pneumonia, apparently most severe on the right side. Diagnosis was based upon generally diffused percussion-dulness, with spots of increased resonance and mixed mucous râles. Life lasted until 5 o'clock the next morning. The pulse remained strong until long after the respiration had become feeble and infrequent. From the time I was called the little patient was unable to swallow. She never cried from the time she was born. After death I noticed protruding from the nostrils something similar to cotton in appearance. The nurse informed me that this first became visible about two hours before death. I have never seen a like substance except in cases of diphtheria.

The mother made an uneventful recovery in spite of the severe shock caused by the sudden death of the baby. Thirteen days after the birth of the baby the other child had a sudden and severe attack of laryngitis, which lasted about five days, though it had been preceded by a slight cough which was at first supposed to be pertussis, caught from cousins. I could detect no false membrane in this case, though there were some indications in sound and temperature that it might be membranous. There were cases of diphtheria and scarlatina in that portion of the city, though I knew of no communication with such cases.

In the case of the baby I noticed a peculiar odor to the breath, and at the same time considered the possibility of infection through my breath at the time of resuscitation, though I was in good health.

The case illustrates to me:

1. That inflation by expired air may succeed when other methods fail.

2. That the method is dangerous because of the ease with which mechanical injury may be done in spite of care.

3. That the method may be dangerous because of the possibility of infection.

I do not think that delay in extricating the head from the vaginal canal was the only cause of atelectasis, because:

1. The child's pharynx was clear from mucus. Of course, if the child's face were covered by the posterior wall of the vagina asphyxia might be produced without the inhalation of mucus. In that case, however, as soon as the face was extricated there would be no further obstruction to respiration.

2. Atmospheric pressure alone was not able to open the air-cells of the lungs.

CONJUGAL DIABETES.

BY HORACE Y. EVANS, M.D.,
OF PHILADELPHIA.

THE literature of conjugal glycosuria is deemed sufficiently extensive and reliable to banish the instances of its occurrence from the category of coincidences.

As long as we are without positive knowledge of the pathology of diabetes mellitus we are encouraged in presenting any peculiarity or anomaly that may tend to confirm or disprove some of the many theories suggested as to its cause.

The data of the following cases are given for the same reason that cases of suspected communication of phthisis pulmonalis from husband to wife were reported twenty-five years ago.

The experience of many of us will no doubt agree with the statement of Debove: "Il est probable que la proportion aurait été plus grande si j'avais toujours en soin d'examiner l'urine des deux conjoints."

The apprehension at the present time seems to be that, under some, as yet, unrecognizable circumstances, diabetes mellitus does become contagious.

Especially does the slowly accumulating testimony go to show the possibility of the husband communicating the disease to his wife.

Mr. C., married at forty-six years, glycosuria developed at fifty years, died of broncho-pneumonia at sixty years.

Mrs. C., married at forty years, glycosuria developed at forty-eight years, died of œdema of the lungs at sixty-two years.

Mr. W., married at thirty years, glycosuria developed at sixty years, died of diabetic coma at sixty-eight years.

Mrs. W., married at twenty-eight years, glycosuria developed at sixty-five years, died of diabetic coma at seventy-five years.

These cases presented no symptoms but such as are usual in chronic diabetes.

They were all corpulent people, weighing from 180 to 250 pounds.

None of them were blood-relations.

Heredity was not a factor in any of them.

None were of the Semitic race.

Three ot the four were natives of Philadelphia.

One of the four also was a neurotic.

One only was a sumptuous liver, occasionally using alcohol and tobacco.

LARYNGEAL SYPHILIS, WITH REPORT OF A FATAL CASE; AUTOPSY-NOTES.

BY A. M. DAVIS, PH.G., M.D.,
PATHOLOGIST TO GERMANTOWN HOSPITAL.

THIS affection, which is one of the most obscure and most interesting manifestations of general syphilis, affording as it does varied clinical and pathological features, has been claimed by many authorities to be of more common occurrence than is generally supposed. Engelsed[1] saw involvement of the larynx 25 times, among 521 cases, or 4.8 per cent. In 218 cases examined by Willigk, 15.1 per cent. showed laryngeal disease, while in Sir Morrell McKenzie's statistics, taken from 10,000 cases, 308 gave evidence of involvement of this organ, furnishing an average of nearly 32.5 per cent.

The lesions appear wide and varied, consisting at the onset of a simple catarrh or follicular hyperplasia, terminating in either condylomata, gumma, or extensive ulceration, with necrosis and cicatricial formation, either singly or combined, as the case may be.

Virchow thus describes gummy tumors:

"Their beginning consists of little, roundish elevations (on the epiglottis and within the interior of the larynx, either singly or as a conglomerate mass) similar to the follicles of the root of the tongue, but of a softer, more marrow-like consistency, often richly supplied by bloodvessels, and especially surrounded with varicose veins. These nodules ulcerate on their surface, at first forming shallow ulcers (the surface breaking down and being cast off), and gradually penetrate in depth as new portions of tissue are involved in the change. . . . If the ulceration reaches a certain depth, a purulent perichondritis usually becomes associated with it, which is combined with partial necrosis of cartilage, and finally effects the expulsion of the necrotic pieces, with the formation of deep sinuous cavities. It is these deep laryngeal ulcers that bring about the much-dreaded stenoses when they undergo partial or complete cicatrization. The margin of the epiglottis becomes at first infiltrated, then the ary-epiglottidean ligament, followed by the true and false cords."

Norton describes a fatal case from a gumma the size of a pigeon-egg, which was situated in the right epiglottic fold.

The most common period of life at which laryngeal syphilis exists is quoted between the ages of twenty and forty years, but cases have been known of hereditary origin; thus, Isidor Frenkl records the case of an infant, apparently healthy at birth, which developed two months later an acute coryza, with progressive laryngeal dyspnœa. Three weeks after the development of the first symptoms death followed, due to stenosis. The autopsy revealed necrosis of the cricoid and left arytenoid cartilages and syphilis of the liver, all of the other viscera being in an apparently normal condition. Following is the report of a case which occurred during the writer's term as resident physician in the Philadelphia Hospital:

J. T., aged forty-six years. Nativity, Philadelphia. Cause of parents' death unknown. No hereditary disease peculiar to the family. She was always healthy when a child; other than this statement the patient absolutely refused to give her history. Physical examination revealed the following: Well-nourished and corpulent individual, weighing about 200 pounds. The breath-sounds during ordinary respiration were quite audible, inspiration being louder and higher pitched than expiration. While the patient remained quiet dyspnœa was scarcely noticeable, but developed on making any unusual exertion, becoming at that time severe and distressing. Several small, irregular ulcers were noticed on the skin of the abdomen and back, and a rupial sore about three inches in diameter, containing a grayish slough, covered the left frontal prominence, the ulceration extending down to the frontal bone.

The tongue and mucous membranes of the cheeks were covered with mucous patches. Examination of the thoracic and abdominal viscera gave negative results.

The patient was placed on the "mixed treatment," consisting of the bichloride of mercury, gr. $\frac{1}{12}$, with iodide of potassium, grs. 10, three times daily, the patches on the tongue and cheeks having been cauterized with the solid stick of silver nitrate. Ten days later symptoms of ptyalism began to develop, and about the same time the laryngeal dyspnœa increased markedly. Pain was absent, and the temperature remained normal. One month after admission the patient was found cyanosed and unconscious, gasping for breath, death resulting in a few minutes, before tracheotomy could be performed.

The autopsy notes were as follows:

An immense amount of adipose tissue surrounded the abdominal viscera and was contained in the abdominal wall, measuring at a point above the crest of the pubis 7 cm. in thickness.

Larynx: The tongue, which was removed with the larynx, showed the circumvallate papillæ to be enormously distended. Epiglottis and vault of the pharynx apparently normal. The thyroid cartilage on the left

[1] Cited in Virchow and Hirsch's Jahresbericht, 1868, ii. b. d., p. 585.

side was necrosed, the necrotic area extending across the median line to the right and being surrounded by a sloughing ulcer which filled up the entire space below the left cord. The tissues underlying the right and left cords were sensibly swollen, the mucous membrane of both cords being inflamed and infiltrated.

Heart: The muscle was thin and everywhere infiltrated with fat, bands of which could be seen running between the fasciculi, giving the peculiar, striped yellow-red appearance. The mitral valve contained a spicule of calcareous infiltration on the free margin of one of the cusps and another nodule near its base; other valves normal.

Kidneys: Cortex showed two or three depressions, the result of hemorrhagic infarcts which had been partially absorbed; otherwise normal.

Liver: Normal in size and weight. Section revealed evidences of fatty infiltration.

Voluntary muscles: Were soft in consistency and infiltrated with fat.

An examination of the lungs, spleen, stomach, bladder, uterus and appendages, and intestines failed to reveal anything pathological.

The pathological diagnosis was: Syphilitic laryngitis, with fatty infiltration of the voluntary muscles, heart, and liver.

Another case of asphyxia from stenosis due to syphilitic laryngitis occurred during the writer's term of service, in which tracheotomy was successfully performed, the patient dying, however, ten days later from aspiration-pneumonia.

MEDICAL PROGRESS.

Iron not Necessarily a Large Ingredient in Our Food.—Those of the profession who are in the habit of largely prescribing ferruginous tonics will do well to remember that the amount of iron contained in the average daily diet of a man seldom exceeds 10 mgms., and a like amount is represented in the excreta.—DR. STOCKMAN, *Journ. Physiology*, vol. xviii. p. 488.

Bilateral Variation of Temperature.—PULLIN (*Lancet*, No. 3771) reports a fatal case of typhoid fever showing a variation of temperature between the two sides of the mouth throughout the attack, amounting at times to several degrees—the greatest disparity recorded was 3.2°. It was noted that the left side furnished the higher temperature, except on one or two occasions. The thermometer was applied between the teeth and cheek on either side. Due care seems to have been taken in these observations.

Post-mortem Cæsarean Section.—HOFFMANN (*Centralbl. für Gynäkologie*, 1895, No. 50, p. 1319) has reported the case of a woman, aged thirty-six years, who in the eighth month of her fourth pregnancy was suddenly seized with eclampsia, terminating fatally in the course of 2¼ hours. Ten minutes after the last inspiration Cæsarean section was undertaken, and a living male child, 15 inches long, delivered. The infant was nourished with the aid of a spoon, but it died at the end of 25 hours in consequence of enfeebled vitality.

Cerebral Surgery.—At the last meeting of the International Congress of Otologists, DR. THOMAS BARR stated (*Journal of Laryngology*, etc., vol. ix. p. 817) that we are now able to reach and deal successfully with the following conditions: 1. Abscess in the cerebrum, especially in the temporo-sphenoidal lobe. 2. Abscess in the cerebellum. 3. Purulent formations at the base of the skull. 4. Infection-thrombosis of the sigmoid sinus.

Who should operate? The question as to who should operate upon these intracranial conditions was presented to the same body, and it was conceded by all that operation belonged appropriately to the province of the pure otologist.

Restoration of Cutaneous Continuity by Epithelial Grafting.—To overcome the disadvantages occasionally experienced in practising the usual methods of skin-grafting, MANGOLDT (*Deutsche medicin. Wochenschrift*, 1895, No. 48, p. 798) proposes a new mode of transplantation. After shaving and disinfecting a suitable portion of the body, preferably the inner or outer surface of the forearm, the skin is made tense and gently scraped down to the papillary layer by means of a sharp razor held at right-angles to the surface. The mixture of blood and epithelium removed is transferred to the previously prepared wound that is to be covered, and there firmly applied with the aid of pressure and a protective dressing. The graft adheres readily, and in the course of a week gives signs of its presence and growth; a new layer of epithelium will usually have formed after the lapse of three or four weeks.

A Contribution to the Statistics of Adenoid Vegetations of the Naso-pharynx.—As the result of an extended clinical study, ARSLAN, of Padua (*Ann. d. Malad. de l' Oreille, du Larynx, etc.*, 1895, No. 12, p. 509), has arrived at the conclusion that adenoid vegetations of the naso-pharynx are of frequent occurrence in Italy. He maintains that heredity and dyscrasic diseases play the principal *rôle* in the etiology; next in importance follow humidity and infectious processes. Operative treatment should, if possible, be concluded at a single sitting. The Moritz Schmidt incision, followed by scraping with the finger, should constitute the procedure of choice. Ethyl bromide is the best anæsthetic for the purpose, and is far superior to chloroform, to ether, and perhaps also to nitrous oxide. In all cases in which the presence of adenoid vegetations in the naso-pharynx is detected the growths should be removed, even if not voluminous. All children should be subjected to a naso-pharyngeal examination before being admitted to public or private schools, to institutions for deaf-mutes, or to other educational institutions.

The Etiology of Multiple Sclerosis.—With the view of clearing up some of the doubt involving the question of the etiology of multiple sclerosis, KRAFFT-EBING (*Wiener klinische Wochenschrift*, 1895, No. 51, p. 895) made a study of 138 cases seen in private and hospital practice. To this end he included in his investigation only cases in which the diagnosis was indisputable; 38 cases were thus excluded. Fifty-eight of the cases were in males, 42 in females. The largest number (44—28 males=16 females) occurred between the ages of twenty-one and thirty years. Among 53 cases (35 males, 18 females), in which an etiologic factor could be

elicited, cold and wet could be considered of causative significance in 40 (30 males, 10 females). These cases fall naturally into two groups: (*a*) Those in which exposure occurred but once, though in intense degree; and (*b*) those in which the exposure was slight but long continued. In the former the symptoms of sclerosis appeared at once, while in the latter they developed insidiously. How cold and wet bring about multiple sclerosis is yet a matter for discussion—whether by lowering the bodily resistance to infection, or by the generation of noxious miasms outside the body, or by inducing metabolic changes leading to autointoxication, or by disturbance of the circulation and the nutrition of the nervous system through an influence upon the vasomotor apparatus.

Familial Myoclonus.—UNVERRICHT (*Dtsch. Zeitschr. f. Nervenheilk.*, 1895, vii, H. 1, 2) reports three cases of the disorder known as myoclonus, which correspond to the cases previously described and justify the recognition of a typical clinical entity. The disorder is manifested by lightning-like contractions, affecting individual muscles of the trunk, face, and extremities. In no case was the face free from movement, but in none also was any movement of the eyeballs observed. The œsophagus, the tongue, the thorax, and the diaphragm were all involved. Although the muscles were symmetrically affected, there was an absence of synchronism in the movements. Muscles acting synergistically were never jerked in common or simultaneously; on the contrary, single muscles or even muscle-bundles were affected. Nor were the movements co-ordinated, as from cortical irritation. The characteristic feature was the absolute arrhythmia. The movements were increased by psychic influences, and seemed to be restrained by the will. They were lessened, but not entirely subdued, by sleep. The affection has been observed in several members of a single family, and complicated by epilepsy. The disorder is to be differentiated from hysteria, chronic progressive chorea, and epilepsy. The movements differ from those of chorea in not involving muscles acting synergistically and influenced individually by the will. This peculiarity suggests the spinal cord as the seat of the pathologic process that acts as a cause. Therapeutically, hyoscine failed, while chloral proved successful —*Centralbl. f. d. medicin. Wissenschaften*, 1895, No. 50, p. 891.

Extensive Suicidal Injury of the Vessels of the Neck, with Recovery.—THOMAS (*British Medical Journal*, No. 1823, p. 1420) has reported the case of a man, sixty-five years old, who, in an attempt at suicide with a penknife, had made a deep wound in the left side of the neck. The sternohyoid and omohyoid muscles were divided; the internal jugular vein was cut through, and its cut ends were collapsed and three-quarters of an inch apart; the common carotid artery was cut into, but not divided; the thryoid cartilage was notched, and the external and anterior jugular veins were severed. Clamp-forceps were immediately applied to the cut vessels and one on each side of the aperture in the common carotid, from which a small spurt of blood, certainly not half a teaspoonful, was jerked out. The left median basilic vein was exposed by an incision and twenty ounces of warm saline solution were slowly perfused, an ordinary glass syringe with a capacity of five ounces, with an india-rubber tubing attached to a canula in the vein, being employed. After seven ounces of fluid had been injected, the man made a short, distinct inspiration; at ten ounces a deeper one (the radial pulse could now be felt beating feebly); at fifteen ounces the breathing became regular and deep; at eighteen ounces the man opened his eyes, but did not appear to be conscious. The clamped vessels were now tied with catgut and the wound cleansed with carbolic-acid lotion and dressed with cyanide-gauze. The man was surrounded by hot-water bottles and the foot of the bed elevated eighteen inches. In the course of an hour the patient had recovered sufficiently to answer in a squeaky voice to his name when called loudly. Improvement proceeded rapidly until the twenty-second day, when violent hemorrhage occurred, preceded a few hours previously by a small trickle, easily controlled by pressure. The wound was at once opened and blood found oozing from the distal extremities of the carotid artery and jugular vein, which were promptly clamped. The common carotid artery was not sound, so that ligatures were applied to the internal and external carotids and to the internal jugular with a small branch entering into it. The patient was greatly collapsed, but quickly rallied, only to suffer renewed hemorrhage from the internal carotid nine days later. This was controlled by pressure with sponges, and a quart of hot water was injected into the rectum. From this time on the patient made a slow recovery, a small sinus in the lower part of the neck disappearing on the removal of a catgut ligature.

THERAPEUTIC NOTES.

Mentholated Oil for Purulent Rhinitis.—FOUGERAY (*Ann. d. Malad. de l' Or., du Lar., du Nez et du Pharynx*, 1895, No. 12, p. 497) has reported a case of acute primary purulent rhinitis in an infant, thirteen months old, due to the staphylococcus albus and staphylococcus aureus, and in which a cure was effected by the use of a 10 per cent. mentholated oil sprayed into the nares and the pharynx five or six times daily.

For the Abdominal Pains of Muco-membranous Enteritis.—

Take of

Menthol	3 grains.
Alcohol, sufficient to dissolve.	
Simple sirup . . .	6 fluidrachms.
Water	3 fluidounces.—Mix.

Dose: Take three or four times in twenty-four hours.
—MATHIEU, *Rev. de Thérap.*

The Treatment of Malarial Cachexia with Splenic Tissue and Bone-marrow.—CRITZMANN (*Presse Médicale*, 1895, No. 68, p. 507) has reported four cases of chronic malarial cachexia presenting enlargement of the spleen, anæmia, and emaciation, successfully treated with splenic tissue and bone-marrow after the usual remedies, quinine, arsenic, hydrotherapy, etc., had failed. He administered daily rather more than an ounce and a half of finely chopped spleen from a young beef, admixed with the yolk of an egg and two drachms and a half of bone-marrow. Improvement soon set in, and in the course of two or three weeks became quite pronounced.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, JANUARY 18, 1896.

THE LUNG AS A POINT OF LEAST RESISTANCE.

IN our last issue we discussed the principle which determines the localization of disease and, from the standpoint of the evolutionary pathologist, advanced the theory that morbid action in many instances means simply a reversion to processes which were normal in an early ancestral or embryonic stage of development. In the case of the uterus and mammæ we saw the application of the law that late appearance means early decay.

In the case of the lungs, however, its application will be promptly challenged, first by the bacteriologist, on the ground that tubercle is an "exposure" disease due to aërial spore-infection, and, secondly, by the physiologist with the obvious statement that the lung remains functionally active as long as life continues. But a closer inspection will, we think, show not only that we may claim its applicability here, but also that it explains the actual condition of affairs better than any other hypothesis. Granting for the sake of argument that tubercle is chiefly contracted by aërial infection (although the great current of recent evidence seems steadily setting toward the view that it enters the system *via* the alimentary canal, and, gaining access to the blood- or lymph-stream, is carried to "points of least resistance" all over the body, the glands, the joint-cavities, the "growth-line" of bones, etc., where it settles and breeds), how are we to account for its peculiar site of attack and development in the apices of the lungs? It certainly cannot be upon any mechanical "settling" or "lodging" principle, for if this were the case then the special filters of the inspired air, the turbinated bodies, would be the commonest seat of attack, the narrowed channel and voluminous pouches of the larynx the next, and the bronchi and the air-cells last of all, which is exactly the reverse of the actual susceptibility. Nor would it seem to be due to a subsidence of the bacilli or spores where the air-current is most stagnant, for even such microscopic particles as they are ponderable and subject to the law of gravitation, and would tend most commonly to fall into and accumulate in the even narrower and more isolated recesses of the *lowest* parts of the lung. Another explanation commonly advanced is that on account of the comparative immobility of the first and second ribs and the pressure of the shoulder-girdle, there is less respiratory movement in this part of the lung than in any other, and hence it is a place of physiologic stasis, a *cul-de-sac*. To which it may be answered, first, that while this lack of "pumping-force" might apply to fluids, it does not at all to gases, and that any tendency to imperfect expansion of the apices would be more than overcome by the tendency of air to seek the *highest* point of cavities, of which the familiar distention of the fundus of the stomach is a case in point; and, secondly, that this expansion does actually take place, so that the apex of the lung is *not limited* by the ribs or even by the clavicle, but extends often *above both* into the yielding tissue of the neck, where anyone who has seen it rising and falling at the bottom of the chasm left after the removal of tubercular cervical glands will be inclined to regard it as really one of the most expansile parts of the organ instead of the least so. The most recent theory is that of terminal blood-stasis, on account of the absence of valves in the pulmonary veins and certain peculiarities in the connections of the veins of the upper part of the lung. But this is opposed by the facts, first, that the apex is really less remote from the source of supply in the roots of the lung than the base, and, secondly, that all pulmonary congestions which are confessedly static in their origin occur at the lowest points,

the base in the upright and the posterior border in the recumbent position.

When, however, we regard the apex of the lung from a comparative and developmental standpoint we find it to be the shrivelling and receding remnant of a cervical extension of the respiratory cavity, whose existence is indicated by the frequent occurrence of one or more cervical ribs, and whose disappearance is part of the general recession of the original body-cavity (cœlom) or pleuro-peritoneal sac. Thus its peculiar susceptibility to disease becomes explicable on the law of the proneness to decay of "senile" or atrophying organs.

As Wiedersheim[1] remarks, "these phenomena (the structural changes of the first rib and apex) should be regarded as degenerative," and the apex falls into the same pathogenic class with the appendix vermiformis.

And not only does this view account for the marked proclivity of disease for a site so inaccessible and otherwise highly improbable as the apex, but it also appears to account for its preference for the right apex, which is in the proportion of three to two. As is well known, upon the right side of the chest we find three lobes and upon the left only two, and as the uppermost right lobe is supplied by an eparterial bronchus, which is not represented upon the left side at all, it is generally believed by morphologists that the superior or special lobe of the right lung is the remains of an eparterial lobe, which was also originally present (but has now completely disappeared) upon the left side, as is the case in many mammals (horse, elephant, seal), and in rare instances as a reversion in the human subject (Dalla Rosa, Bohls). And the apex which is formed by this atrophying lobe is nearly twice as frequently the site of tubercular disease as its fellow of the opposite side. All these may of course be nothing more than coincidences, but to the comparative pathologist they are highly suggestive ones, and of sufficient interest even to clinicians to warrant high expectations of further developments in this field of research.

[1] Structure of Man, p. 179.

PHYSIOGNOMY OF CRIME.

IT is rather startling to read that crime is on such an increase in this country that it is five times more common to-day than it was in the year 1850; yet such is the fact, according to the figures given by General Brinkerhoff, President of the National Prison Congress. These figures are as follows:

Year.	Prisoners.	Ratio to population.
1850	6,737	1 in 3442
1860	19,086	1 " 1647
1870	32,901	1 " 1171
1880	58,609	1 " 855
1890	82,329	1 " 757

This rapid increase suggests either that our whole population will soon be in jail if something is not done to prevent it, or that these statistics need explanation and correction. That there is some error, or at least some unknown factors at work to give this appearance of rapid decline in the public morality of this country, we cannot doubt; but what it is we cannot suggest. It can scarcely be due to increased efficacy of our police and judicial systems, by reason of which more offenders are tried and convicted; it is quite as likely to be due to the increased laxity of our tribunals and pardoning boards, by reason of which more convicts are sentenced a second and a third time, and so go to swell the prison population.

It is very evident, however, that these figures, even if subject to revision, are significant of something radically wrong in our civilization. They show only too plainly that our antiquated criminal laws and law-courts are not meeting the demands of the country in suppressing and controlling crime. These laws and procedures, in other words, are not founded on *scientific* principles; they have not come into line with the advances made in other departments of human knowledge and activity. This is seen at once if comparison is made with some of these other departments. Let us take, for instance, that of public hygiene, which has to do with the conditions and general control of diseases and disease-production. What would be thought if the increase of disease, as shown, for instance, in the mortality-rate, had been at a rate comparable with this increase of crime?

It is not to be wondered at that scientists are beginning to protest against a system of trial and administration which is responsible, even if only in part, for such results. One of the most prominent of the specialists who have attempted to place criminal anthropology upon a scientific basis is Professor Cæsar Lombroso, a translation of one of

whose recent works is now before us.[1] As a rational attempt to master this difficult subject by applying to it a scientific method we shall refer briefly to Lombroso's work and submit it to a necessarily condensed criticism.

In the first place, we may say that we have been much impressed with some of the facts stated by Mr. Morrison in his introduction. He shows conclusively, from the statistics of the New York State Reformatory, that conditions of environment have much to do with the production of criminals; 52 per cent. of juvenile delinquents came from homes which were positively bad, and only about 7 per cent. from homes which were positively good. Again, 41 per cent. left home before or soon after reaching the age of fourteen, while only 1 per cent. were surrounded by wholesome influences at the time of their lapse into crime. This moral aspect of the subject strikes us as of great significance in an introduction to a book which, like Lombroso's, deals almost exclusively with the mechanical and physical aspects of the criminal. Mr. Morrison himself does not point out this latent inconsistency. In all these juvenile criminals we cannot help but think that their vicious environments had more to do with their fall than had the shapes of their skulls and their other purely somatic characteristics. Even their mental and moral traits may have been formed as much by example as by heredity.

It may surprise some to know that Lombroso does not attach first importance to cranial anthropometry. He says distinctly that variations in measurement between the normal and the abnormal cranium are so small as to defy all but the most minute research. He attaches greater importance to the anatomico-pathological anomalies of the female offender, and gives a list of them; a list which only experts can consult and use with profit. He does not ignore general anthropometry, however, but gives it considerable importance; in fact, it occupies large space in his book. In respect to the data collected by Lombroso in these various fields, and which he offers in a startling array of figures, we frankly confess that we should not like to give a hasty and rash opinion. The impression made upon us is that Lombroso's work represents a method and a beginning, but that it may be over-hasty yet for even the most expert to draw from it conclusions which are to be regarded as applicable in the present state of society and criminal law.

Among the anomalies described and classified by Lombroso are those of the head, face, ears, and teeth. The list includes such topics as asymmetry, prognathism, virile and Mongolian physiognomy, peculiarities in the hair, and tattooing. These and innumerable others are submitted to a statistical study, so that the book in parts is much overloaded with figures, which may add to its scientific value, but which detract somewhat from its interest. On the debatable ground of tattooing, where Lombroso has been freely criticised, we do not think that he makes out much of a case for the female offender. The most curious induction drawn by him is that in the simplicity of her tattooing, as compared with the male, the female offender furnishes an example of atavism, since she tends to revert to the practice of the women of savage tribes, who notoriously are less tattooed than the men.

In some parts of his book Lombroso abandons his more strictly mechanical work and attempts to give the mental traits of the female offender, especially in crimes of passion. As a psychological study this attempt does not seem to us to establish satisfactorily anything distinctive. The passions and crimes of these offenders are strictly conventional, and only lead to the conclusion that those who displayed them were in a general way without moral control; *i. e.*, that they were criminal.

The chapter on hysterical offenders is to us the least satisfactory in the book. It is not a scientific study of hysteria according to the approved modern ideas of that disease. It is, in fact, exceedingly superficial and uncritical. Lombroso, following the bad example of Legrand du Saulle, hopelessly confuses hysteria with all forms of moral depravity and degeneracy. He brings an indiscriminate charge against hysteria of producing liars, thieves, and murderesses, but the symptoms and mental traits that he enumerates are almost without exception not those of the great neurosis. We emphatically dissent from the method followed and the results obtained in this chapter.

The fact that true hysteria is not common in, much less identical with, criminality is curiously shown by Lombroso in a study of the visual fields of female offenders. These criminals present rather frequently scotomata and a rather characteristic peripheral irregularity of the visual fields (marked,

[1] The Female Offender. By Professor Cæsar Lombroso and William Ferrero. With an Introduction by W. Douglas Morrison. New York: D. Appleton & Co.

for instance, by great peripheral depressions). But the author distinctly says that the absence of the special visual characteristics of hysteria proves that the moral and functional anomalies of criminals are not due to hysteria. This is in strong contrast with his other statements about hysteria, to which we have just taken exception. His chapter on the acuteness of all the special senses in criminals is a very close study.

Lombroso also devotes special chapters to the characteristics of the born criminal and the occasional criminal. We have not space to present these sketches, but we may say that their outlines are perhaps rather misty for the practical purposes of criminal jurisprudence as this is at present practised.

On the whole, Lombroso's work, as exhibited in this book, presents us with a method rather than with fully accomplished results. The value of this method must yet be tested by experience founded upon work by more than one man and in a wider field, and by the verdict of a yet somewhat remote future. We are impressed, however, with the importance of this method, and with the hope, even belief, that it will yet do much to solve some of the grave sociological questions that have to do with the production and the control of crime.

We ought not to omit to mention, perhaps, that Lombroso has exhibited to us, in this book, photographs of the skull of Charlotte Corday. The readers and admirers of Lamartine[1] will perhaps learn with dismay that this "Angel of Assassination" has presented to modern science a large number of anatomico-pathological anomalies in her cranium!

ECHOES AND NEWS.

PROF. V. BRUNER, Director of the Anatomical Institute at Rostock, is dead.

DR. J. M. DACOSTA has been re-elected President of the College of Physicians of Philadelphia.

DR. LEONARD PEARSON, of Philadelphia, has been appointed Pennsylvania State Veterinarian.

DR. AUGUST BIER has been elected Extraordinary Professor of Surgery in the University of Kiel.

DR. SAMUEL G. DIXON has been elected President of the Philadelphia Academy of Natural Sciences.

[1] See his sketch of Charlotte Corday in his "History of the Girondists."

DR. WILLIAM E. HUGHES, of Philadelphia, has been elected President of the Delaware Valley Ornithological Club.

PROF. WICHERKIEWICZ, of Posen, has been elected to the Chair of Ophthalmology in the University of Cracow.

DR. WILLIAM PEPPER, of Philadelphia, has been elected one of the Vice-Presidents of the American Philosophical Society.

PROF. P. EHRLICH has succeeded to the Chair of Special Pathology and Therapy in the University of Berlin, formerly occupied by the late Prof. A. Hirsh.

PROF. V. HÜFNER, of Tübingen, has been called to the Chair of Physiologic Chemistry in the University of Strassburg, rendered vacant by the death of the late Hoppe-Seyler.

DR. LUDWIG RÜTIMEYER, Professor of Comparative Anatomy at the University of Basle, and well known for his paleontologic investigations, died recently at the age of seventy-one years.

PROF. BRAUN, of Königsberg, has been called to the Chair of Surgery in the University of Göttingen, in succession to König, who was recently made a member of the faculty of the University of Berlin.

THE Section on Surgery of the New York Academy of Medicine at its regular meeting last Monday night elected Dr. B. Farquhar Curtis, of 307 Madison Avenue, Chairman, and Dr. John B. Walker, of 33 East Thirty-third Street, Secretary.

THE UTILITY OF STATE MEDICAL EXAMINATIONS is again demonstrated by the announcement that the Pennsylvania State Board of Medical Examiners recently rejected 22 out of 76 applicants for a licence to practise medicine in that State.

THERE has recently been resurrected in the document-rooms of the Senate in Washington an old claim of Issachor Zacharie, a former chiropodist of New York, against the Government, amounting to $45,000, for treating corns and bunions of soldiers in the War of the Rebellion.

THE THIRD INTERNATIONAL CONGRESS FOR PSYCHOLOGY will be held at Munich, from August 4 to 7, 1896. The following subjects will receive discussion: Psychophysiology, Psychology of the Normal Individual, Psychopathology, Comparative Psychology. The official languages will be German, French, English, and Italian.

DR. CONAN DOYLE pleads the American view of the Venezuelan dispute. He exposes the faults and arrogance of the English Yankee-haters, and proposes that an Anglo-American Society be started in London, with branches throughout the empire, with a view to promoting good feeling and furnishing the English with the American side of questions that may arise, and *vice versa*.

PROF. RUDOLF LEUCKART, the distinguished zoölogist, celebrated the fiftieth anniversary of his accession to the

doctorate on December 13th. In 1850, at the age of twenty-eight years, he was made Extraordinary Professor of Zoölogy at Giessen, and in 1885 Ordinary Professor, and also Professor of Comparative Anatomy. Since 1875 he has been Professor of Zoölogy and Zootomy at Leipsic.

DR. GEORGE DOCK, at present Professor of Practice of Medicine and Pathology in the University of Michigan, Ann Arbor, has been elected Professor of Pathology and Bacteriology in the Jefferson Medical College, Philadelphia. Formerly he held the Chair of Pathology in the University of Texas, at Galveston. Though still a young man, he has a reputation as a pathologist and as an original investigator in bacteriology.

THE senior officers of the service have submitted a bill for Secretary Herbert's approval reorganizing the personnel of the Navy. In the Medical Department this contemplates increasing the number of assistant surgeons to fifty, with the title of junior surgeon and the rank of junior lieutenant. Passed assistant surgeons are to be known as surgeons, while those now in the grade of surgeons are to be staff surgeons.

THE Commissioners of Charities have appointed M. J. Rickert Deputy Warden of Bellevue Hospital. The position is a new one, created by Mayor Strong's new Board of Charities. Mr. Rickert is forty-five years old, and has been connected with Bellevue for twenty-five years. He passed the best civil-service examination in a contest with twenty-five applicants for the position. The salary of the Deputy Warden is $1200 a year.

AT the request of Dr. Landon Carter Gray we warn the profession against a man who is canvassing among physicians of New York, representing himself as connected with the American Union Life Insurance Company, stating that Dr. Gray is the Medical Director, and soliciting them to apply for the position of Medical Examiner, at the same time asking from each a fee of $3. He is an impostor in every particular and the profession should beware.

A NEW lunacy law has been prepared by Assemblyman Horton, of Wayne County, who will introduce at once to the New York Legislature a bill relating to the examination of alleged lunatics prior to being pronounced of unsound mind. The bill provides that none but State insanity experts may examine persons whose sanity is brought into question; that the experts must form their judgment solely from the examination and not from testimony, and that the experts must be strangers to the persons examined.

MRS. CATHARINE HATCH died on January 1st at her home, No. 102 West Thirty-fourth Street, of cancer. Her case became famous some months ago, when Dr. Edward W. Burnette developed a cancer while treating her, from which he subsequently died. Although the secular press jumped to the conclusion that this case demonstrated the contagiousness of cancer by inoculation of the cancer-cell or germ, it has not been accepted as such by the best medical authorities. Mrs. Hatch, it was alleged, had contracted the disease by using a speaking-tube previously used by an infected person, but this was never proved, and she declared that the disease with her was hereditary.

THE INFLUENCE OF THE ANTITOXIN UPON THE MORTALITY FROM DIPHTHERIA IN FRANCE.—At a recent meeting of the Paris Academy of Medicine MONOD (*Médecine Moderne*, 1895, No. 101, p. 783) presented statistics demonstrating the influence upon the mortality from diphtheria in France exerted by the antitoxin since its employment from November, 1894. The following figures represent the number of deaths from diphtheria during the first six months in eight years in 108 French cities having a population of more than 20,000:

	1888–94. Average.	1895. Average.
January . . .	469	205
February . . .	466	187
March . . .	499	155
April	442	160
May	417	113
June	333	84

THE success of a young physician in obtaining the position of assistant in one of our State Asylums evidently excited the cupidity of an obscure but aspiring M.D., and elicited the following unique communication to him:

DECEMBER 13, 1895.

DEAR DOCTOR: I see by the papers you have been appointed as junior physician to ——— Asylum. I am reading for examination some as similar position you hold. Please give me some points as to preliminary qualifications, etc. I will pay you for your trouble if you give me points that will help me. Give the branches that counts and the per cent.

I am 35, have had 10 years general practice, 2 private. Habits good, chew some tobacco, can give good ref. as to character, etc.

If you know or have your question you can give me a good idea of what I ask.

Your respectfully, * * * *

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PUBLIC HEALTH.

Stated Meeting, January 10, 1896.

HENRY DWIGHT CHAPIN, M.D., CHAIRMAN.

THE MILK-SUPPLY OF NEW YORK CITY.

DR. GEORGE B. FOWLER, Health Commissioner, presented certain charts prepared from the records of the Board of Health, showing some of the more prominent facts connected with the present supply of milk to this city. He said that on an average there were brought daily into the city 19,164 cans of milk, each holding 40 quarts, and that 78.8 per cent. of this large quantity came from New York State alone. The practical bear-

ing of this fact was evident when one considered the need of certain legislation regarding the control of the milk-supply. At present the State Board of Health had an insignificant sum of money at its disposal with which to pay salaries and reimburse owners of cattle when these were slaughtered to prevent the spread of disease. They had only five inspectors for the whole State. Over 6500 persons deal in milk in this city. The Health Department has made 72,036 inspections of milk during the year, has investigated 106 complaints from citizens, has arrested 408 persons for selling impure milk, and has been the means of collecting over twelve thousand dollars in fines from those brought to trial.

DR. EDWARD W. MARTIN described some of the methods employed for preventing the sale of adulterated milk in the city. He said that for convenience the city was divided into six inspection-districts, corresponding to the judicial districts. When the inspector found by testing milk with the lactometer that it was apparently decidedly below the standard, he made careful notes of his observations, and prepared two sealed samples of milk. One of these was sent to the department-chemist for analysis, the other was delivered to the milk-dealer, so that the latter could, if he so desired, have it analyzed independently of the Health Board. If the analysis and other facts recorded in a given case seemed to justify the arrest of the dealer, this was the next step taken. A careful record of such arrests was kept, and it was interesting to note that in the case of one milk-dealer in New York City there had been, from 1887 to 1893, six arrests made, and his total fines amounted to one thousand dollars. Notwithstanding this extraordinary record, the speaker said, this man was still in the business. About 99 per cent. of all the adulterations of milk investigated proved to be either the addition of water or the removal of cream.

DR. ERNEST J. LEDERLE spoke of the methods employed in the chemical analysis of milk. He said that at the very outset it was most important to observe certain precautions, otherwise it would not be possible to obtain for analysis a fair sample of the milk. The first precaution was to see that the milk was not acid, for if it were there would be a certain amount of separation of the casein. The next most important point to observe was regarding the churning of the milk. If it had been churned, the fat-globules would be separated, thus preventing one from securing a fair sample for analysis. The milk in the sample-bottle should be mixed thoroughly, but this agitation must be very gentle. Experience has shown that this mixing could be best accomplished by gently inverting the bottle ten times. Where it was only required to determine the total solids, 5 c.c. of the milk were placed in a small dish made of lead and tin, and evaporated to dryness over a water-bath, observing the usual precautions for securing perfect dryness of the residue before weighing. By weighing the dish both before putting in it the sample of milk and after this had been reduced to a dry residue, it was easy to compute the weight of the total solids. This should represent about 12 per cent. The total solids were divided into two groups—those consisting of fat and those not fat. The latter included the casein, albumin, milk-sugar, and salts. If it were required to determine the amount of ash, then a platinum dish must be used, and the residue ignited at a low red-heat. The quantity of ash is quite constant, being about 75 per cent. The determination of the amount of salts indicates whether or not the milk has been adulterated by the addition of water. If the addition of an acid to the ash causes effervescence, it is evident that some carbonate has been added as an adulteration to the milk.

The amount of butter-fat was determined by a rather more difficult process. A strip of filter-paper, 22 by 2 inches, especially prepared for this purpose so as to be free from fat, is rolled up into a small cylinder and made to imbibe the sample of milk. In this way the five grammes of milk are spread over a very large surface. The cylinder of paper is next placed in a sort of distilling apparatus, called an "extraction-apparatus," where it is subjected to the action of ether until all the fat has been extracted from the bibulous paper. This ethereal solution of fat is next evaporated, and on weighing the residue one obtains the quantity of fat. The law here requires that milk shall contain only 3.5 to 4 per cent. of butter-fat, but this is a direct invitation to adulteration. On an average, the milk coming into New York City contains about 4 per cent. of butter-fat, and the law should require this amount.

The speaker next described several of the more simple tests for milk. He first described the lactometer. This instrument, which is a form of hydrometer, is graduated into one hundred equal parts between the zero and 100 on the scale, so that each division represents 1 per cent. To use it it should be very gently immersed into the sample of milk contained in a suitable cylinder, care being taken not to splash the milk up on to the stem of the instrument. Unless the milk is at a temperature of 60° F., the temperature at which the lactometer is graduated, a correction must be made for the temperature. If the instrument should float in the milk at 90°, it would indicate that the sample contained an added ten parts of water. As cream is lighter than milk, it was evident that the removal of the cream raised the specific gravity of the milk, and thus made it yield a higher reading on the lactometer. From this some observers had been led to state that the lactometer was an entirely unreliable instrument, as the instrument might stand at the same point in two samples, one of pure, rich milk, and the other a sample adulterated by removing the cream and adding water. But it should be remembered that the milk-inspector is expected to make use of judgment and experience, and if this were done, there was not the slightest danger of making any mistake. For example, when lifting the lactometer out of a sample of rich milk, one would notice that the stem of the instrument was greasy and that the milk clung to it, whereas if the milk were of poor quality this greasiness would not be seen, and the milk would run off the stem very much as water would do. If, therefore, the lactometer read below 100 at 60° F., the milk was undoubtedly impure; if, on the other hand, the reading was above this point, the inspector must use his judgment and experience in passing on the milk.

The amount of cream could, of course, be roughly determined by allowing it to rise to the surface of a sample of milk contained in a simple graduated tube. It could be quite accurately determined by an instrument called the lactoscope. This is constructed

on the principle that the richer the milk the more water must be added to it in order that it shall become sufficiently translucent to admit of reading through it certain black lines on the inner cylinder of the instrument. A practised observer would soon learn his personal equation, and would not then make an error of more than 25 per cent. in the use of this instrument. Another very quick and quite reliable method of estimating the percentage of butter-fat was by means of a centrifugal machine. With this the error should never exceed 0.5 per cent.

DR. ROWLAND G. FREEMAN then read a short paper on the

SIGNIFICANCE OF MICRO-ORGANISMS IN MILK.

He said that the non-pathogenic micro-organisms were for the most part derived from the dust of the building in which the milk is handled, from the dirt on the cow, etc. It was not improbable that some of these micro-organisms now classed as non-pathogenic were concerned in the production of diarrhœa in children, and they certainly caused souring of the milk; but it was most important to remember that the same loose dairy methods that were responsible for the introduction of the non-pathogenic bacteria were also the cause of the contamination of the milk with the pathogenic forms. These micro-organisms could be detected by staining, by culture, by inoculation into animals, and also by their disastrous effects on the consumers. Undoubtedly many epidemics of typhoid fever, diphtheria, and other infectious diseases have been caused by such impure milk, but there were many technical difficulties in the way of demonstrating the presence in milk of these pathogenic bacteria. The speaker said that probably 7 per cent. of all the cattle in New York State were tubercular, and in our city milk small numbers of tubercle bacilli were frequently present. The tuberculin-test was a most delicate one for tubercular disease, and by its use, in conjunction with wise legislation, we might hope in the future for a better milk-supply.

DR. HENRY M. COIT, of Newark, N. J., the originator of the plan of "certifying milk," gave a short account of how he had come to establish this practice, and what results had been secured. After describing the obstacles he had had to encounter during two years of effort to secure a better milk-supply for cities, he said that it had finally occurred to him that by interesting the medical profession the matter might be taken into their own hands. With a committee of seven or eight representative physicians in Essex County the work had been begun, and after considerable search they had found a dairyman who lived up to the terms of a very stringent contract. Under this contract several experts were employed by the committee and paid by the dairyman, and when they were satisfied that the provisions of the contract were fulfilled they were empowered to certify to the character of the milk-supply. The physicians on the committee were not allowed to have any financial interest in the work. The dairyman who had met with the approval had found in the course of the two years in which this plan had been tried that his daily output of milk had increased from 800 quarts to over 2000 quarts, so that the system could be considered a commercial success. It had also been the means of stimulating neighboring dairymen to increased efforts to improve their product. By proper supervision at the dairy it had been possible to secure a milk of uniform nutritive value, and other important information regarding the effect of different feeding of the cows on the quality of the milk had been secured. The committee had not been able to give the bacteriological side of this question as yet much consideration, although in certain special experiments carried on during the summer it had been found possible to reduce the number of micro-organisms to less than 3400 per cubic centimetre. Dr. Snow, of Buffalo, had already introduced this system of certifying milk into that city.

REVIEWS.

ELECTRO THERAPEUTICAL PRACTICE. A READY REFERENCE GUIDE FOR PHYSICIANS IN THE USE OF ELECTRICITY. By CHARLES S. NEISWUNGER, Ph.G., author of *Suggestions in Electro-therapeutics;* Professor of Electro-physics, Post-graduate Medical School of Chicago. 128 illustrations. Chicago, 1895.

THIS little work of eighty pages records the *modus operandi* in the treatment electrically of upward of one hundred and fifty diseased states which vary widely in their character. The treatment of abortion, asthma, chancroids, corns, epilepsy, locomotor ataxia, carcinoma, suppurating wounds, and a number of other conditions is detailed. In the treatment of such conditions no one save the most enthusiastic electro-therapeutist would expect material benefit from the use of electric currents.

The book would appear to be misleading to the practitioner of medicine whose experience with electro-therapeutics has been limited. It cannot be said that the object of the book, "as an aid to the more rational use of electricity in the medical profession," is entirely fulfilled.

THE THEORY AND PRACTICE OF COUNTER-IRRITATION. By H. CAMERON GILLIES, M.D., London. New York: MacMillan & Company, 1895.

A CAREFUL and philosophic study of therapeutic methods concerning which our empiric knowledge outruns our understanding is to be found in the book before us. The author has with considerable care collated from his own experience and from reading the various conditions in which counter-irritation is useful, and has shown its limitations and its applications. The introductory historic chapters are interesting and suggestive. The general principles are clearly set forth. The author believes that the term "counter-irritation" itself is a misnomer, and argues that whatever good comes from the use of external irritants is because they stimulate the activity of the tissues of the part to which they are applied, accelerate the blood supply, and increase nutrition or repair. The defect in this proposition is that it fails to explain why blistering the chest, for example, should be more useful in pleurisy than blistering the heel. There is here, certainly, no such direct connection between the tissues to which the blister is applied and the structure upon which the remedial influence is exerted, as would be required by the author's theory.

TWENTIETH CENTURY PRACTICE. AN INTERNATIONAL ENCYCLOPEDIA OF MODERN MEDICAL SCIENCE. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D. In twenty volumes. Volume IV. Diseases of the Vascular System and Thyroid Gland. 8vo., pp. 841. New York: William Wood & Co., 1895.

THE fourth volume of this great undertaking contains contributions by only four authors. The first is by Dr. James T. Whitaker, and deals with Diseases of the Heart and Pericardium, occupying altogether 454 pages. In this most elaborate monograph, covering all the varied phases of the subjects treated of, has been incorporated a vast mass of facts, whose value, it is to be regretted, is impaired by looseness of expression, unattractiveness of style, unnecessary verbiage, indiscriminate arrangement, and a failure to digest adequately the data presented. The second article is on Diseases of the Bloodvessels, and has been ably written by Dr. A. E. Sansom. It occupies 184 pages, and is characterized by the care and precision for which this well-known clinician is noted. Diseases of the Lymphatic Vessels are quite fully discussed in 45 pages by Dr. Bertrand Dawson, and a liberal bibliography is given. Diseases of the Thyroid Gland, including Myxœdema, Cretinism, Exophthalmic Goitre, Goitre, Malignant Disease, Thyroiditis, Tuberculosis, Hydatid Disease, Syphilis, and Actinomycosis are admirably presented within 131 pages by Dr. George R. Murray, who was the first to use systematically thyroid gland in the treatment of myxœdema, and thus comes peculiarly well equipped for the performance of his task. An extensive bibliographic table will be useful to those who may care to study these subjects independently. Reference is facilitated by an index of 18 pages. The book makes a good appearance, being well printed in clear type on paper of good body, and being well bound.

LA METHOD BROWN-SÉQUARD. TRAITÉ D'HISTOTHÉRAPIE. LA THÉRAPEUTIQUE DES TISSUS. COMPENDIUM DES MÉDICATIONS PAR LES EXTRAITS D'ORGANES ANIMAUX. Par M. BRA. Paris, 1895.

UNDER this array of titles Dr. Bra presents the history and literature of organotherapeutics. Introductory letters by Constantin Paul, Mendel, Ewald, Bruns, Emminghaus, and Byrom Bramwell precede the author's own introduction. All of these authors, though commending the general plan and purpose of the work, are noticeably guarded in their support of organotherapeutics, with exception of the thyroid treatment. Undoubtedly this is the present attitude of the profession to the whole question, but not the less on this account is the work before us interesting and instructive.

Written by one who has been from the first (1889) a pupil and disciple of Brown-Séquard, we are not surprised to find a degree of reliance in testicular fluid as a therapeutic agent accorded by few, and certainly not established by the evidence at hand. The author presents at great length (150 pages) the entire literature of this subject, good and bad, scientific and unscientific. The subsequent chapters on cerebral, thyroid, cardiac, pancreatic, hepatic, suprarenal, muscular, renal, pulmonary, splenic, medullary, and lymphatic therapeutics are equally full and comprehensive.

As a compendium of the literature of these subjects, the work is most admirable; but there is not, as there cannot be, any evidence of definite system, and the mass of material is presented without the coherency that would carry conviction. We end as we began on taking up the book with the feeling that the accumulated evidence will not permit a doubt of the value of the thyroid treatment, and that, so far as the other extracts are concerned, there is a plentiful lack of crucial demonstration.

As an almost cyclopedic presentation of the literature this book may be warmly recommended, and it will be found most useful for the many details of methods of preparation and administration of the remedies with which it deals.

GUY'S HOSPITAL REPORTS. Edited by E. C. PERRY, M.A., M.D., and W. H. A. JACOBSON, M.A., M.Ch. Vol. LI., being vol. XXXVI. of the third series. 8vo., pp. 272. London: J. & A. Churchill, 1895.

WE have learned to look forward with expectant interest to the annual publication of *Guy's Hospital Reports*, with the confident feeling that the year will not have passed without yielding evidences of advance in medical science and art; and this year's *Reports* is no exception to the rule. The present volume contains eleven original articles, all of which are of a high order and some of which are especially noteworthy. Hale White and Channing Pearce contribute an article on Empyema Following Lobar Pneumonia, to which they append reports of twenty-six cases. L. A. Dunn describes a unique Case of Multiple Atrophying Sarcomata of the Head and Neck. John Fawcett records the details of an investigation showing that urine containing piperazin in solution has no solvent effect upon uric-acid calculi; that piperazin fails to relieve the pain of gout and to increase uric-acid elimination; and that it has little or no effect when given to birds in whom uric-acid deposits have been produced by injections of potassium chromate. F. Newland-Pedley discusses the Treatment of Suppuration of the Maxillary Antrum, especially with Regard to the Use of a Permanent Opening in Obstinate Cases; and also the Treatment of Congenital Cleft Palate. Theodore Fisher furnishes a paper on Hypertrophy of the Heart without Gross Organic Lesion. G. Bellingham Smith concludes from a study of forty-eight cases of amputation in senile gangrene that this morbid condition is due to a diseased state of the arteries; that when gangrene is confined to the toes the treatment should be expectant and antiseptic; that picking and cutting away of dead structure close to the affected area, as well as amputation, are to be avoided, on account of the liability of reinfection; that when gangrene has reached the dorsal or plantar surface of the foot, a high amputation is indicated—preferably through or above the knee. F. M. Turner is responsible for an interesting communication on Scarlatinal Nephritis and its Varieties. J. Frederick W. Silk undertakes to show that a combination of nitrous oxide and ether forms a most valuable addition to the list of available methods of producing anæsthesia. P. H. Pye-Smith reports an interesting Case of Bilateral Paralysis of the Facial and Auditory Nerves, and cites two additional instances of similar kind. The work is further embellished by a number of woodcuts and five plates.